

MORE NEWS, MORE REVIEWS

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# Macworld

## *Best Macs tested*

12-page Buyers' Guide  
From £649 iMac to  
Apple's cool new Cube

## **Faster Internet**

How to speed-up your Net access

## **Dreamweaver 4**

## **QuickTime 5 Preview**

We put it through its paces





**Simon Jary**  
editor-in-chief

Pre-emptive *what?* New Finder? *Aaargh!!!*  
Why are we so scared of Apple's  
nice new Mac operating system?

## Scary future is X-rated

**"For many users, the Dock will be about as welcome as that baby alien was to John Hurt's belly."**

**M**ac OS X, Apple's forthcoming major update to its operating system, scares the hell out of most current Apple customers. It's not the marvellous new features – multiprocessing and protected memory, for example – that give Mac OS 9 users the shivers. It's the new ways of doing things that makes their hair stand on end. Think different, yes. Use different, now just hold on, buddy...

We're confused by new terms such as pre-emptive multitasking, multithreading and symmetrical multiprocessing. They don't sound very useful. In fact, they sound more like things we wouldn't want to touch with an extended keyboard. Although *Macworld* has explained these super Mac OS advances over the past few issues (see "Mac OS X: the full story", November 2000), Apple would do itself a favour by thinking up snappier ways of describing OS X's must-have features.

Instead of "pre-emptive multitasking", Apple should get us all drooling over "NoDelay": Mac OS X's ability to stop us having to wait for applications to finish their tasks before starting another. Instead of "multithreading", we should be offered "LoopWork": the chance to do one thing while we're doing another. I'm sure the people who dreamed up names such as FireWire and QuickTime could do even better.

Once its customers are hooked on the appeal of upgrading to the new Macintosh operating system, Apple could then reassure them that making the change won't be as difficult as re-learning how to walk – except this time using your hands instead of your feet, and moving in the opposite direction.

Mac OS X is not OS 9+. The old code has been trashed. OS X is Unix that looks and behaves like the Macintosh used to – only with all the plus points of a thoroughly modern system. And, for such a different operating system, Mac OS X looks remarkably like Mac OS 9, OS 8 or even System 7. Except that Apple has tinkered with the old user interface to make it even easier for new users to get to grips with their computers. Trouble is, us oldies have to act like novices too – and learn how to use their Macs all over again.

Apple has killed off some of the Mac's favourite old characters. Who doesn't use the Apple Menu several times a day? Which of us isn't pleased that the Control Strip offers handy shortcuts to key tools? Who hasn't (very) occasionally thought that Balloon Help might just offer an answer? But Mac OS X doesn't include one of these regulars. Instead, we get the Dock – as entertaining as it is useful. But, for many users, it will be about as welcome as that baby alien was to John Hurt's belly. In the new Finder, no one can hear you scream.

The really weird thing about first using Mac OS X, however, is the new Finder. At the moment, the Finder is everything that isn't an application. It's the desktop with a different name. We dump our files all over the desktop, messing up the screen like a playpen in a crèche. This is why it's called the Finder – because it then takes us as long to find where we put a folder or downloaded a file as it does a schoolboy to seek out and destroy his rival's battleship. "Three icons from the hard disk, ten up from the Trash... you hit my MP3 file."

In OS X, the Finder is a lot more organized. There are three different ways to view your file nesting, special buttons to get you straight to key places, a drop-down menu that remembers where you go to most often, and even a Back button just like on your Web browser. With so many new options, it's little wonder that people are nervous of making the switch.

Apple is to be commended for tightening up our ways of working. But it must also realize that its users aren't going to be very happy about it. Mummy Apple has come in and tidied up our playroom – and we're upset about it, even if it looks a lot nicer and is a much safer place to be.

It might make you feel better to know that Windows users have it even worse. While we're getting a bright new system that's essentially as robust and powerful as super-computer Unix, most Windows 95 and 98 users are being asked to stump-up £40 for Windows Me – Win 98 plus a collection of multimedia fancies. Windows Me (Millennium Edition) doesn't make PCs any quicker (unlike OS X and multiprocessing Macs), but it does frustrate its users by changing 98's default look-and-feel. Apple makes us more organized; Microsoft makes changes for the sake of it.

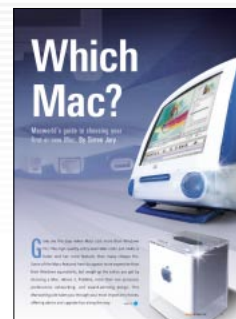
With the arrival of Me, Microsoft has bottled out of swiftly moving all of its consumers to its own robust, powerful OS, Windows 2000. While we can expect a Mac OS 9.5 – code-named Fortissimo – sooner rather than later, we should be glad that Apple is forcing us to its superior operating system maybe as early as the end of next year, when new Macs may no longer ship with OS 9 as an option.

If you don't like some of Mummy Apple's tidy new ways or fear the dumping of old faves, air your views at [www.apple.com/macosx/beta/feedback.html](http://www.apple.com/macosx/beta/feedback.html). If everyone else feels the same way and demands that Balloon Help be reinflated, then Apple is more than likely to bow to our demands. When *Macworld* tells you to be wary of the Public Beta, we don't mean you should be scared of Mac OS X itself. It's coming to help, not to hurt. Don't panic, get excited.

MW

# DECEMBER 2000 Contents

## COVER STORIES



### 79 Which Mac?

Gone are the days when Macs cost more than Windows PCs. The high-quality, entry-level iMac costs just £649 and is faster and has more features than many cheapo PCs. This guide takes you through your most important choices, offering advice and upgrade tips along the way.

### 97 Connecting to the Internet

We take a look at your Net-connection options.



### 105 Mac OS X

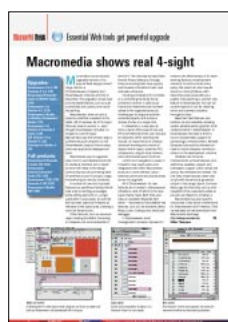
The first of our regular guides to Mac OS X: this month, we look at new menus.



**111 Create: Video**  
Further digital-video editing tips and tricks for iMovie 2 users.



**72 QuickTime 5**  
Apple's Web-stream player update is now available in public beta form.



**22 Web-tool boost**  
Macromedia has upgraded its entire Web-authoring range to version 4.





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## NEWS

**20** Apple promises cheaper Cubes and new software  
Macromedia updates Web tools  
QuickTime 5 Preview released  
ADSL headache  
Adobe's digital-video vision  
Quark founder retires  
Motorola showcases 1GHz G4 chip  
PC games port to Mac  
Apple makes play for BETT show  
Film stars' iMovie cameo  
Double Data RAM memory boost  
Corel makes products promise  
New Apple UK boss makes mark  
Napster's Mac move



## PRODUCT NEWS

**39** Handsping colours Visor  
Microsoft tracks optical mouse  
Epson's laser family  
Eizo's touch of class  
NEC's monitor treble  
Notable mini-studio  
Hansol debuts high-end CRTs



Have iBot news for you  
The iBot FireWire Desktop Video Camera (left) is among the first FireWire desktop video-cameras to hit the market.

## BUYER'S GUIDE

**133** **133-135** Buying a Mac  
Macworld's advice for readers buying a G4 Cube, new Power Mac G4, new, improved iMac, or an iBook or PowerBook. Includes UK's only benchmark scores updated every month.

### 137-149 Star Ratings

A full listing of our acclaimed product-reviews and group tests for the previous 12 months, with feature index and detailed buying advice.

### 150-151 UK Reseller Guide

Apple UK's authorized resellers listed.

**153 Shopping** Advice on buying from mail-order companies. And 24 pages of dealer ads.



## CREATE



**119** **Create: Graphics**  
We lift the lid on QuarkWrapure, the new box-graphics tool.



**127** **Q&A/tips**  
Downgrade to OS 9; capture DV stills; shut-down debacles; and Classic sounds.



**124** **Create: Graphics**  
Save time by using Adobe Illustrator's transparency tools

## COMPETITION



**109** **Awards 2001**  
Win a digital-photo solution from Hewlett-Packard worth £1,500!

## EVERY MONTH



**10** **Letters**  
Readers write on Mac OS X, Apple in schools, Mac evangelizing and online banking.

**15** **CD Pages**  
Try the QuarkWrapure demo, as well as heaps of top games, including Parsec LAN-Test.

**49** **David Fanning**  
Trouble is brewing for the legendary Xerox PARC.

## REVIEWS



**54-55** **Adobe Photoshop 6.0**

**56** **The Second Coming of Steve Jobs**

**58** **Terran Cleaner 5**



**57** **Palm m100**

**61** **Sony UP-DP10 Business InkJet 2250tn**

**63** **NetStation Pocket Hub**

**Beach Head 2000**

**64** **Herald**

**Earth Images Collection**

**66** **HipZip**

**Baldur's Gate**



**67** **Stylus Color 680**

**Stylus Color 880**

**Stylus Color 980**

**68** **BBEdit 6**

**Type & Talk 4**

**71** **PitStop Pro 4.5**

**Studio Artist 1.5**

**72** **QuickTime 5 Public Preview**



# Why Apple is wrong to drop HyperCard

## What is HyperCard?

**H**yperCard is a "Software Construction Tool" that lets you easily create custom software solutions for your Macintosh. It features an intuitive method of placing buttons and text containers (objects) onto a blank application window. These objects can then be "scripted" to perform customized tasks. If you do not wish to write scripts, pre-scripted objects come with HyperCard. You can simply cut-&-paste these pre-scripted objects into your applications. To make things even simpler, scripts and other forms of assistance are widely available on the Internet.

According to one of its creators, Bill Atkinson, HyperCard is "programming for the rest of us".

Apple introduced HyperCard in August 1987. It was developed by a team of individuals including Atkinson (the creator of MacPaint) and Dan Winkler (the creator of HyperTalk). During its 13 year history, it spent some time in Apple's Claris software division, but returned and is now on the verge of being discontinued by Apple in spite of a large and surprisingly loyal group of followers.

HyperCard featured an intuitive and quick method of building 'home-grown' applications. Because of these features, HyperCard became wildly accepted in the areas of education and small business. In fact, many small businesses were developed completely around HyperCard and its ability to easily create custom software solutions. Later, with the advent of QuickTime, HyperCard became even more powerful, allowing individuals to create applications that incorporated this QuickTime technology for use in multimedia presentations. In fact, for a while, Apple considered merging QuickTime and HyperCard so that all QuickTime files could also be used as applications, but this idea was later abandoned.

HyperCard, is still for sale at many locations, but is not being developed any further and has not been slated for Carbonization in OS X.

**F**rom their beginnings in the 1950s, computers have always been about increasing human capacity. They took us to the moon. They gave us lightning-fast communication.

But, about two-and-a-half years ago, progress stopped. Apple killed HyperCard. We didn't know it at the time, because the people responsible for its death wouldn't admit it. HyperCard was missing-in-action. The Macintosh HyperCard community learned of its MIA status in 1998 when long-awaited version 3.0 failed

to appear. Instead, we received version 2.4, and were told to wait for the next upgrade. So we waited – for nearly three years. As a community, we finally figured out that HyperCard had died when Apple said that HyperCard would not be Carbonized (optimized) for its next-generation operating system Mac OS X.

Emotionally, we stood together for several moments, like a bunch of kids who've just been kicked off the playground by a bunch of bigger kids. We kicked a few emotional stones



and wandered off in different directions wondering what to do next.

So, what's the big deal? It's just another piece of software that's bitten the dust, right? Wrong. HyperCard happened to be the thing that could have given freedom, not to humanity as a whole, but to humanity individually. Freedom to take your several-thousand-pound plastic and metal box, and turn it into a servant that would fulfil each and every need that you had.

HyperCard was designed to give users the ability to create software solutions in a way that was so amazingly simple that people would laugh at it. They would scoff at it for exactly the reason that made it so powerful. It was simple. It was fast. It was so versatile that many of its users couldn't have acceptably explained it to you if you offered them money. If you were in need of a software solution – no matter how specific – HyperCard was right there to fulfil your needs. HyperCard was an unlimited supply of self-designed solutions all for less than £100 and a couple of weeks of study.

Why did HyperCard die? Why did something so necessary turn into "Dead



### HyperCard creations

(Top) The phenomenally successful graphical puzzle-game *Myst* was developed using Apple's HyperCard; (bottom) as was the author's own shareware *Book of Decks*.

Technology?" For the first time in the history of computers, we are witnessing the computer industry actually push back progress. HyperCard gave its users unlimited freedom. Maybe Apple didn't want its users to have that. Many of HyperCard's users have said that their HyperCard solutions work just fine on older machines with older operating systems.

It'd be nice to believe that the computer industry is actually trying to bring us better solutions, not just more expensive ones. **mw** Artist and writer Jonathan Scott has been developing shareware via HyperCard since 1993.

<http://user.shikoku.ne.jp/songe/programming/shareware.html>



## Subject: Mac OS X

There seems to be a lot of whingeing about adapting to a few nominal changes in the GUI and Finder in Mac OS X. Do people really grasp what's on offer? If you think your current crop of graphics, editing or music packages offer serious computing power, think again. Most high-end imaging tools are developed for Unix.

A highly evolved OS is bound to be more complex, but to long for the past out of nostalgia or the fear of learning is sacrilege.

We will be richly rewarded in years to come as developers convert an array of high-end Unix apps to Mac. To have a Unix-based system on your desk for just over a grand is a benediction.  
*Yannick Lord*

## Subject: Mac OS X

I've installed Mac OS X on my Wallstreet PowerBook, and my apps run problem-free under Classic at speeds comparable to Mac OS 9.0.4. And OmniWeb is a fantastic Carbonized Web-browser. My only criticism is the OS X file structure takes a lot of getting used to. I'm a great one for leaving active folders and files on the desktop, but the Unix structure forbids this.

All in all, I've had some fun out of my £25, and I can't wait for the final version and loads of Carbon and Cocoa applications at nominal upgrade charges.  
*Andy Barton*

## Subject: Mac OS X

I installed Mac OS X Public Beta on a 500MHz MP G4. One of the first things I did was download Classic Menu, which allows for Apple and Applications menus

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to appear in the traditional places. One of the things I don't like about OS X is the way it forces you to work in a particular way: if people want to have a messy desktop, I say let them.

I also think OS X's Aqua prettiness, bouncing icons and the groovy Dock wear thin rapidly. I felt I was lumbered with windows that look odd and don't work in an intuitive way. For all the much-vaunted ease of navigation of the browser view, it's still easy to get lost in the file system. And without the Apple menu, it can take ages to find anything. Where are those QuickTime movies, again?

*Robert McMinn*

## Subject: Mac OS X

I've been using Mac OS X for a few weeks and have found it to be powerful and fun. That said, it's a lot like Windows 98, but without the Start Menu. I know Apple is looking to OS X Beta users more for bug fixes than wholesale changes, but I used OS X's own Sketch Program to draft a few suggestions on how the OS can be improved:

- A new Finder window that links the OS 9 Finder and the new Finder in OS X;
- A new space-friendly System Preferences window;
- Combining the Finder, System Preferences and Sherlock into one powerful program; and
- A unique Trash window.

*Matthew Tichenor*

## Subject: Mac OS X

I installed Mac OS X on my ageing original (revA) 98MB iMac and have hardly used OS 9 since. The stability of OS X is flawless, the bundled Mail program is first rate, and the



## Star Letter: Back to school

When my son was five he took to the Mac, and at eight was fluent enough to solve basic running problems. Now aged 12, he can talk Mac speak fluently. The other day he brought home a screenshot of work he'd been doing at school on Microsoft Office on a PC. He needed help. Of course he needed help – for a start, I don't use Office, and he is so used to the Mac OS he was tripping up more on the Windows operating system procedures than the program itself.

When he showed me this homework, a fury came over me like no other. Why is he being brainwashed with this PC stuff when he knows Macs so well? Why don't schools give pupils a choice? After all, he uses a Mac at home, so why is he being taught such an uncreative program on a PC when there's such a wealth of creative apps out there? Money men use Windows to do accounts and admin. Well, my son doesn't want to be an accountant.

Apple, why aren't you in my son's school teaching the teachers how the Mac can inspire creativity. I feel like donating my Mac so my son and his friends can use it at school. Apple must show kids the Mac OS at school, and they'll soon see how clunky, blocky and unsmooth Windows is.

*Best Jay*

Grab.app is also great.

The only surprise has been how much I like Aqua, which is easy on the eye, intuitive, and "friendly". The Dock's bouncing icons are the best example of this. I feel it's a neat and stylish replacement for both the Apple Menu and Application switcher.

I find it a chore switching back to OS 9, because it now feels like it restricts the way I use my Mac. Its incredible how right Apple have got this beta.  
*James Relph*

## Subject: Mac OS X

Missing from your otherwise excellent introduction to Mac OS X was a feature explaining why OS X will be so much better than Microsoft Windows 2000. I suspect that – given all the disruption, expense, and frustration involved in moving from OS 9 to OS X that you describe – some people with

older systems may be tempted to make a different journey: from Mac OS to Windows.

*Pete Boardman*

## Subject: The last Word

I joined the Mac community with my Mac Plus back in the mid-80s, using three killer applications on my external 20MB hard-drive: MacWrite, MacPaint and MacDraw. On the journey to their demise I bought Word 3.0. This was a killer app too – it killed speed, it killed my machine, and it damn-near killed me with the frustration. What a waste of money it was.

After many years, I amazingly found myself considering turning to Microsoft once more – this time, to Microsoft Office 2001 for Mac. That was until I read a description of the app in my MacWarehouse catalogue. I quote: "The new release takes full advantage of key Apple

Letters continue on page 12 ➤



continued from page 11 ►

technologies, such as Quicktime." (MacWarehouse, issue 60, p30). It seems that even after they have killed, MS apps remain thirsty for more.  
*David Glover*

## Subject: Carbon complaint

Am I the only one to be miffed that Office 2001 isn't Carbon-compliant? I ran it on the OS X Beta but, instead of displaying in Aqua, it started the Classic environment. One would have thought that having a release date so close to that of Mac OS X would have meant Carbon compliance would be a must. Or perhaps Microsoft just wants us to fork-out for another upgrade next year.

*Alistair Lentell*

## Subject: Mac life not so grand

A friend of mine recently asked for advice about buying a computer. He had £1,000 and needed to burn CDs, download MP3s and record his own music. Ever tried telling someone a grand can't buy them a decent Mac? It went against the grain, but I ended up suggesting he got himself a 750MHz Wintel machine, complete with soundcard, 17-inch monitor, 56K modem, 128MB RAM, a 32MB graphics card and a CD writer. The price? A princely £700, including VAT!

This is an attractive – and upgradeable – package and explains Apple's recent poor sales. People know all about iMacs and the G4 Cube – but tell them you have to pay through the nose and are stuck with the same graphics card, and they laugh in your face.

Come on, Apple. Make these little beauties more versatile, more affordable – and watch sales rocket.

*David Gamble*

**MW** iMac plus USB CD-R costs £859 including VAT

## Subject: Don't bank on it

It was with a mixture of amusement and frustration that I read your news piece on Mac online banking

(October *Macworld*, page 28).

In it, you quoted a spokesperson for First Direct, espousing its commitment to customer choice and platform compatibility. I'm a long-term First Direct customer, and was frustrated by the unavailability of its Net banking for Macintosh users at launch.

No one at the bank's Internet Division could explain why it couldn't accommodate the Mac platform. Because First Direct offers higher rates of interest over the Internet, frustrated Macintosh users have been subsidizing Windows account-holders for all this time.

*Nigel Green*

## Subject: Behind the scene

Apple managed to turn things around in just three years by designing appealing machines. The new G4, for instance, is a beautiful machine but, unlike iMacs, it hasn't sold because it appeals only to existing Macintosh customers.

Apple is getting left behind in the mass-market area. I want it to produce a TV decoder-cum-hard disk, offering broadband access and digital recording functionality. With its Xbox, Microsoft is showing that such sideways moves are possible.

*Thomas Sharpe*

## Subject: Missionary position

I'm a Mac enthusiast – and, because I push the Mac as the best computer solution – I am effectively working for Apple as a walking advertisement. I have to say, I'm doing a better job than Apple itself. Apple's UK iMac ads give no indication of how powerful the £649 iMac is. Apple must tell Mac rookies exactly what they're getting for their money, instead of leaving it to people like me.

It's not as if I haven't got enough to do, what with having to pay for the privilege of being a full-time Mac OS X Public Beta tester. So, where's my pay cheque, Apple?

*Neil Flanigan*

## Trash

**QuickTime 4's  
silly volume wheel**



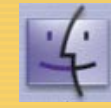
Apple got some stick for radically changing QuickTime's interface from one that conformed to its own UI guidelines to a shiny metallic affair. Even those

who loved the futuristic look-&-feel hated its fiddly volume control wheel.



## Flash

**QuickTime 5's  
Aqua volume slider**



For QuickTime 5, Apple has kept the controversial metallic interface but dumped the fiddly wheel. Now you can change the QuickTime Player's volume by simply

moving the new volume control slider. Thanks for listening guys!



## Subject: Mac evangelist

The business pages of a national newspaper recently described Macintosh users as "growing older and not being replaced, because their children use Windows PCs". Another article described the Mac as a "declining system with a unique operating system that nobody wants".

Who can we blame for this decline? Apple? Microsoft? No, the reality is that we, the Mac consumers, are to blame. Word of mouth is the most potent marketing tool but we don't evangelize the Mac.

I've now decided to do my bit – but if I'm the only one, don't complain when you are forced to use a Windows box ten years from now.

*Pascal Harris*

## Subject: Future crystal clear

What a shame someone has hacked into Microsoft's system. What made me chuckle was that Microsoft was worried its secrets for future projects may have been stolen.

You don't need to be a computer whiz-kid hacker to guess the future look of Microsoft systems.

Looking into my crystal mouse, I predict Bill Gates will produce translucent machines

and a new Cuboid PC. The new MS Windows 2001 will now be known as MSX with a new MS search-engine called Dr Watson, and will claim to be leading the field in desktop systems.

Only time will tell.

*Sheldon Charach*

## Subject: Top Jobs

With regard to David Pogue's column in November's *Macworld* ("Bully for you, Jobs"), I'm sure that Mr Jobs is not an egomaniacal bully, but just a good leader.

He's the kind of leader who takes all necessary measures to get the job done. Yes, he gets rid of people, but only those who can't play as part of a team.

Mr Jobs is my kind of boss. Does anyone know of any openings in either of his companies?

*Larry Wanget*

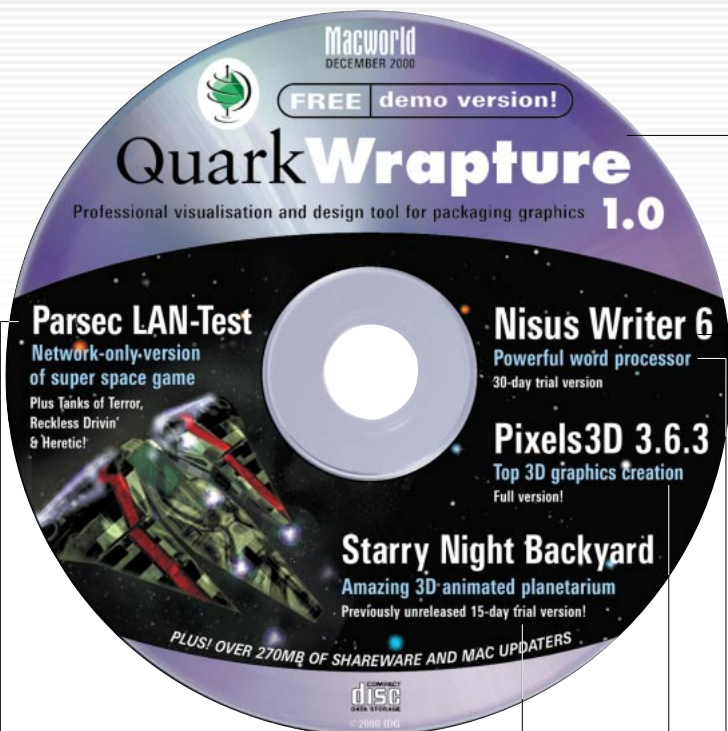
## Correction: CanoScan D660U

In October *Macworld* Reviews we incorrectly stated that the CanoScan D660U consumer scanner costs £234 including VAT. It does, in fact, cost £139 including VAT.

We apologise for any inconvenience this (Canon PR) error may have caused. For further details about this product call 0121 680 8062. **MW**

A demo of QuarkWrapture, the full Pixels3D 3.6.3 program – plus six trials and all the latest demos, shareware, updaters and games make this month's CD an action-packed affair. Vic Lennard leads the way...

## MAIN ITEMS



Also see tutorial on page 119 



### QuarkWrapture 1.0 demo

With its combination of visualization and design tools, QuarkWrapture accelerates the entire concept-to-market process for packaging professionals who work in two dimensions to create three-dimensional projects. Visualize the design in three dimensions with the click of a button, and distribute these 3D renditions for approval, sharing your ideas more quickly and identifying potentially costly mistakes long before you go to press.

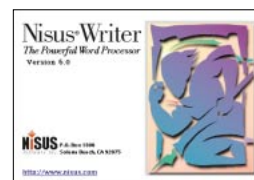
See the Read Me file for demo restrictions.



### Nisus Writer 6.0 30-day trial

Nisus Writer 6.0 has even more power and flexibility than before, offering you a unique, creative experience and complete multilingual writing solution unmatched by any other word processor. New features include a grammar checker, RTF filter, text analyser, zoom, support for Navigation Services and Contextual Menus, and importing graphics via QuickTime.

Yours to try for 30 days.



### Parsec LAN-Test

Parsec is a fast-paced multiplayer 3D Internet space combat game. This LAN-Test version is the first playable release. Up to four people can play on the same local area network but not on the Internet.



### Reckless Drivin'

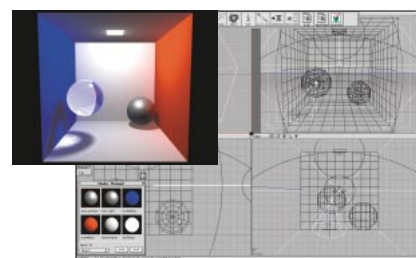
Reckless Drivin' is a new action game that's similar to its predecessor, Burning Rubber, but has been rewritten from scratch. Smooth, dynamically zoomed, scrolling 16-bit graphics. Play the first three levels.



### Starry Night Backyard

Discover the wonders of astronomy for the first time or enhance your observing pleasure if you are already a convert to this wonderful pastime. See how the sky will look tonight, tomorrow or far into the past or future. View the stars as they appear from your own backyard, from a country on the other side of the world, or from another planet. Witness a total eclipse from the Moon, watch the Sun set from the surface of Mars, or even ride a comet.


Serial number included for a 15-day trial.



### Pixels3D 3.6.3

PIXELS3D 3.6.3 is a professional 3D modeling and animation package. It has faster performance than v3.2 and even more powerful tools and features. Professionals and new users alike can easily make eye-popping 3D models and animation with this intuitive software package.

Convert the demo into the full program by following the instructions in our Read Me 1st file.

page 16 



# Cover CD DECEMBER 2000



Before you start working your way through the software on our CD, go to the System Utilities folder and make sure you install the following:

## ■ Acrobat Reader+Search 4

Install this version to be able to read many of the on-screen manuals.

## ■ Stuffit Expander & DropStuff

Versions 5.5, 5.1.2 and 4.5 are included.

## ■ System tools & ATM Lite

The CD also carries the latest version of InternetConfig, UnZip 5.32 and ATM Lite 4.6 (required for Suitcase 9).

## ■ QuickTime 4

Some programs require QuickTime 4. This can be downloaded from [www.apple.com/quicktime/download](http://www.apple.com/quicktime/download).

## INSIDE MACWORLD



### Adrenaline Charts Pro 1.5

Versatile tool for rapidly creating static and dynamic professional-looking charts. Lets you create shaded charts you can manipulate in real-time.

### BBEdit 6.0 demo

High-performance HTML and text editor. Designed for editing, searching and manipulating of text. Use for 24 launches.

### Boris Continuum 1.0

Adobe After Effects filters for creating intersecting layers in 3D space with soft cast shadows, true 3D spotlights and motion blur. Demo of 23 filters.

### Hot Door MultiPage

A simple, practical plug-in for creating multiple pages within Adobe Illustrator 9. Demo limited to two pages; multiple page printing and PDF export disabled.

### MacScripter's Magazine

Summer issue of the easy to follow, hands-on introduction to AppleScript. Includes Mac OS classic version and the Expanded AppleScript Dictionary.

### MacVCD

Video CD player. Supports large screens, multiple video CDs and QuickTime conversion. Five-minute save-disabled demo.



### PitStop Pro 4.5

Adobe Acrobat 4 plug-in for preflighting & editing PDF documents. Thirty-day trial.

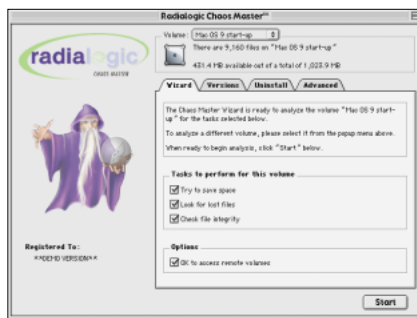
## CD CATALOGUE



Courtesy of Mark Pirri's superb DiskTracker program, Macworld brings you a searchable catalogue of all our CDs from 1997 to 2000 – over 194,000 files! This will grow month by month to allow you to find any file you want, without wearing out your CD-ROM drive. The latest version of DiskTracker (2.0.2) is also included – don't forget to register if you find our library useful.



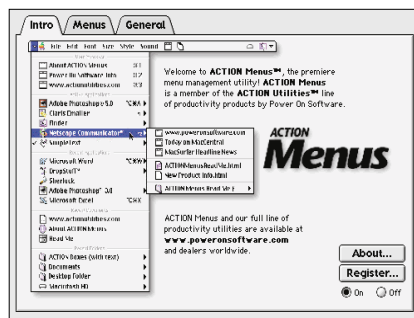
## SERIOUS SOFTWARE *includes*



### 10138 Chaos Master 1.1 demo

Chaos Master is a collection of utilities that will help you manage the files on your hard disk. It will help you clean out old, duplicate or damaged files, update applications to the latest versions with help from VersionTracker.com, uninstall unwanted applications and related files, and much more. It is an invaluable tool to help you figure out how much clutter and unnecessary files are wasting space and slowing down your hard disks.

This demo version is feature limited; it only allows you to run the Wizard to see some of the files you might want to clean off of your hard disk but does not actually allow you to perform any operations on them.

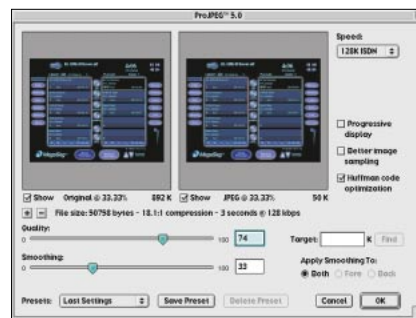


### 10138 ACTION Menus 1.0.1

ACTION Menus enhances the look and feel of normal menus by giving you the ability to take control of the contents and organization of your Apple and Applications menus. It adds a default set of custom menus that give you access to your most recently used and/or favourite documents and folders. The enhanced Applications menu allows you to see currently open windows as well as recent documents and folders in an hierarchical menu off the running applications.

ACTION Menus also adds Named Separators so you will never be lost in an ACTION Menu.

Try it fully for 30 days.



### 10138 ProJPEG 5.0.1 demo

ProJPEG is a file-format plug-in for Adobe Photoshop 3.0 or greater, providing true seamless integration with Photoshop and open and save simplicity and eliminating the need to use multiple applications for Web JPEGs.

Version 5.0 boasts improved memory handling to allow ProJPEG to work for Web graphics or hi-res JPEG images, and advanced Photoshop actions support for batch processing and automated work flow, plus a new interface with resizable and zoomable image previews for better compression feedback and ergonomic work flow.

The demo is save-disabled.

# Cover CD DECEMBER 2000

## GAMES WORLD



### Heretic 0.9.3

This is a port of id and Raven Software's Heretic, available for the first time on the Macintosh. Heretic is a 3D first-person shooter in the same style as Doom and Hexen. It uses the same core engine as Doom, with a few modifications, and is the prequel to Hexen: Beyond Heretic, which was made available as a commercial release for the Macintosh back in 1995. Unfortunately, the original Heretic was never made for the Mac. Brad Oliver decided to port Heretic to complete the sequence and give Mac users the missing piece. Current version fixes an old colour problem and also adds true 'mouse look' ability (you can now look up and down via the mouse or an analogue joystick).



### Tanks of Terror

Tanks of Terror is an OpenGL kart racing game with tanks, big weapons and even bigger bosses. It's set in the 50s during a very B-movie-ish alien invasion. It features true 3D environment, indoor and outdoor maps, dynamic lighting and weather, changing gravity, animated backdrops, advanced transparency effects, six worlds, two race modes, boss battles, 'deathmatch' type games, 34 maps, tank customization, and network play

Unregistered version allows you to play one world, which consists of three regular race maps (in two different modes), one timed gauntlet map and one boss map. It also includes one special network battle map.

## FAULTY COVER CD-ROM?



• If your cover disc is broken and you want a replacement CD, please contact Kelly Crowley, on 020 7831 9252, or email at [kelly\\_crowley@macworld.co.uk](mailto:kelly_crowley@macworld.co.uk).  
• If your cover CD doesn't seem to work as it should, please check you have read all the instructions on the cover disc pages carefully first. If it still doesn't work, then please email Woody Phillips at [woody@macworld.co.uk](mailto:woody@macworld.co.uk).



## DEMOS & GAMES



SkyScaper

This month's Top 10 Shareware Games include the latest versions of some favourites plus some interesting new ones.

For those of you who enjoy classic breakout-style arcade games, there's **Brickles Deluxe v1.3.1** and **MacBrickout 4.1**. The more serious gamers among you will dive for the latest incarnations of **David's BackGammon (3.9.1)** and **Hearts (3.1)** while the younger audience will enjoy **Hang 2000**, **MacSnake 1.4** and **Tic-Mac-Toe 1.0.2**.

On the new side, there's **Evolutionary War 0.9**, a chess-style board game, the **Puzzle Panic** puzzle creator, and **SkyScaper**, an excellent arcade-style vertical climbing game. Make your way up the side of the building but avoid the closing windows and falling plantpots and other items!

## ALSO ON THE CD



### COMMS & INTERNET

18 applications including:  
**Cookie Dog 1.01**  
**Email Effects 1.6.5**  
**HTML OptimizerPro 1.8**  
**PageSpinner 3.0**

### EDUCATION

Three programs including:  
**Flashcard Wizard 1.0**  
**TypingPractice 1.1**

### FORMATS

Four items including:  
**FontChecker 1.2.1**  
**LogotypeMaker 1.2.1**

### GRAPHICS



Nine items including:  
**OneApp Slide Show 5.6.3**  
**RTM JPEGShow**  
**Screen Catcher 2.1**  
**SuperBladePro 1.01**

### ICON UTILITIES

**Iconographer 2.0**

### INFO



**1984 OnLine issue 28**  
**ATPM 6.10**  
plus three other items and six utilities for developers

### MATHS & SCIENCE

Six programs including:



**SlideRule 2.5.1**  
**SCREENSAVERS**  
**FlavorSavers 2.6**  
**iScreensaver**

### SOUND & MUSIC



Nine applications including:  
**BayTex Party! Pro 2.5.2**  
**easy beat 1.2**  
**FreeMIDI 1.45**

### UTILITIES

Ten categories comprising over 50 useful tools for your Mac including:



**ABF Rename 3.3**  
**AddressBook 4.2.4**  
**ClipTextEdit 1.0.1**  
**Convert 1.2.5**  
**CoolCam 1.6**  
**Doublet Scan 3.1.1**  
**Drag'n Back 3.5**  
**Drop Drawers 1.2.6**  
**Jeremy's CSM Bundle 2.1.3**

### Mac Army Knife 2.2

**MacPopUp 2.1**  
**Metronome 1.4.5**  
**PrintToPDF 2.1.1**  
**Quick Text 2.9**  
**SwitchRes 2.4.2**  
**TableText 1.0.1**  
**TextBroom 3.1.0**  
**UtilityDog 1.3**

### UPDATERS

This month's dedicated updaters folder includes 70MB of patches to bring many popular applications bang up-to-date, including:  
**Adaptec Toast/Deluxe 4.1.1**  
**Adobe After Effects 4.1.1**  
**Bryce 4.1**  
**CD-ROM Toolkit 4.0.1b**  
**Digital Performer 2.72**  
**FAXstf 6.0.3**  
**FlightCheck 3.9r2**  
**lomegaWare 2.7**  
**MarkzTools 8.04**  
**Norton AntiVirus 5/6 (10/00)**  
**Virex (10/00)**  
**Vistascan 3.7.3**

### Cool Extras

**Fortune Cookie** – all the brief wisdom without the little crumbly bits!

**AutoPurge 2.3.2** – latest version of the essential Mac OS 9 Temporary Items bug utility.



### Mac ISPs

Internet access offers from Abel gratis, AppleOnline, easyspace, FreeUK and LineOne.

### Netscape

Complete packages for Communicator 4.75 and IE 5.

### Plus...

... many thanks to Simon Youngjohns for our CD icons.

## SHAREWARE



Shareware is a distribution method, not a type of software. It makes fitting your needs easier, as you can try before you buy. Shareware has the ultimate money-back guarantee – if you don't use the product, you don't pay for it. If you try a Shareware program and continue using it, you are expected to register. Support shareware authors so that they continue to provide high-quality programs for the Mac.



# Apple promises 'exciting'



**PowerPC: must try harder**  
Apple is confident that its PowerPC partners, Motorola and IBM, will next year close the gap on Pentium and Athlon PC-chip megahertz speeds.

Apple has promised that faster Macs, new computers, and a pair of innovative software products will be released next year. These future products emerged during Apple's final-quarter financial announcement in October, when Fred Anderson, Apple's chief financial officer, was joined on stage by CEO Steve Jobs.

The announcements were designed to galvanize customers and investors alike – and came as a surprise as Apple rarely discusses future products. The company returned its 12th successive profitable quarter, despite reduced investor returns (see Business News, page 36).

## Speed bleed

Despite the phenomenal success of its consumer-level iMac, Apple has been suffering in first-time computer buyer markets – as consumers believe that Intel's higher chip speeds make PCs faster than Macs.

Responding to this (incorrect) perceived disadvantage in attracting the minds of consumers, Apple

**"We will have a very competitive line of desktops and laptops – the best I've seen in my career" – Steve Jobs, Apple CEO**



launched multiprocessing G4 Power Macs at July's Macworld Expo in New York. Apple claims that, when running Adobe Photoshop, its dual-processor 500MHz Power Mac G4 is as fast as a 2GHz Pentium III is expected to be when it is eventually released. This working-speed advantage will be more apparent when Mac OS X is launched, as applications optimized ("Carbonized") to work under the new operating system will have multiprocessing support built-in.

Current Mac speeds depend on advances in PowerPC processor technology. Motorola and IBM manufacture the PowerPC chip as part of the AIM (Apple, IBM, and Motorola) PowerPC alliance.

PowerPC MHz speeds have fallen behind those of Intel and AMD.

AMD's Athlon chip is increasingly being used by PC makers as it's cheaper than Intel's Pentium, and now offers a range of speeds up to 1.2GHz – as well as cooperating with a wide variety of memory types, including SDRAM and DDR. Outside observers contrast its speeds with those of current PowerPC G4 chips, which top-out at just 500MHz.

Motorola and IBM have been developing new technologies to bring PowerPC-chip speeds forward, but the central problem has been the percentage of high-speed chips manufactured. Motorola and IBM



September, the sales did not reflect the company's predictions. This severely damaged Apple's bottom line (see Business News, page 36), and strained its relationship with investors.

Mark Rogers, Apple's new regional director for UK & Ireland, hopes the rebate will "tip the balance" for those interested in purchasing the G4 Cube. "There are massive opportunities for this product," he affirmed.

To find out more about Apple's rebate, call 0870 876 4846. **MW**

## Cash-back on Cube and screen

Apple is offering a £250 rebate for UK customers buying a Power Mac G4 Cube with one of the new Apple displays. It means that customers buying a Cube with any current Apple monitor will receive a voucher entitling them to claim £250 back from the company. The purchase must be made between October 23-December 31, and the G4 Cube and screen must be

purchased from an authorized Apple dealer or the online AppleStore. The voucher must be filled in and returned to Apple with proofs of purchase and the serial numbers from the side of the boxes the products are shipped in. Customers applying for the rebate must allow eight to ten weeks from the date the claim is validated by Apple for their rebates to arrive.

The 450MHz G4 Cube costs £1,249; the 500MHz model – only available from the online AppleStore – costs £1,599 (both excluding VAT). Eligible displays include the 17-inch CRT Studio Display (£349), the 15-inch Studio Display (£699) and the 22-inch Cinema Display (£2,799).

## Sales boost

The rebate is Apple's attempt to boost sales of the design-conscious product, which many analysts and customers complain has been introduced at too high a price.

Though Apple sold 107,000 Cubes world-wide between July and the end of



# 2001

claim that such problems will soon be rectified.

Paul Clark, Motorola's European marketing communications manager, explained to *Macworld* that chip yield is "a kind of a bell curve". "As you manufacture processors, you get a percentage of high, low and medium speeds coming out. The ones in the middle are the most stable, while those on the extreme of the bell curve are less stable. And we therefore don't regard those extreme speeds to be definite products."

Other differences, however, work to Apple's advantage. PowerPC chips run significantly cooler than Pentiums, and consume less power. Yet for first-time buyers, high MHz ratings distract potential shoppers from actual application speeds and true performance comparisons.

Looking to close this gap, Jobs says that Apple is "working closely with Motorola to address the problem".

"We'll be introducing systems with higher processor speeds next year", he said. "We plan to close the perceived speed gap in the first half of 2001." Jobs also promised that Apple would make further progress during the rest of that year, hinting at additional future enhancements to the platform (see page 32).

## Fill the shelves

"Our engineering department has been working overtime on some of the most innovative products ever", claimed Jobs. "Apple will have a very competitive line of desktop systems and laptops – the best I've seen in my career."

New products are in the pipeline, too. Jobs discussed possible handheld devices and Internet appliances – but would not clarify if Apple planned to enter these markets. He expects a "collision" between handhelds and mobiles. Hints of such a collision are emerging now – Handspring is to launch its VisorPhone module in the UK next year. The VisorPhone module fits the Handspring's expansion dock, working as a conventional mobile phone, with text messaging, caller ID and speed-dialling functions.

The G4 Cube sold poorly in the quarter. Jobs attributed this to its price, early problems with the power button and a "perception" among

some consumers that "flow lines" in the Cube's enclosure represent a manufacturing flaw. Jobs promised more configurations and a lower entry-level price next year.

"The Cube was designed to be the ultimate Mac for high-end consumers and professionals. We think it's one of the finest engineering products to date," he said.

When asked if he thought the thrill of Apple's innovative designs was wearing off, he replied: "In our track record of the last several years we've released only one product that hasn't met our sales expectations – the G4 Cube."

## Think outside the box

Jobs noted the success of iMovie (currently at version 2), and promised Apple would deliver two new innovative software products next year. He said: "We're really excited about these products, they will allow consumers to do things that they cannot do on other platforms," he said.

iMovie is Apple's consumer-level desktop video-editing solution. It can splice together digital-video movies – adding titling, music and effects through a simple-to-use interface.

iMovie 2 comes bundled with all new Macs, except with the £649 iMac.

Mac OS X, Apple's next-generation operating system, will also launch next year, and is key to the company's future, Jobs believes.

"No operating system transition can be painless, but things are looking very, very good," he said, revealing that Apple has sold over 60,000 copies of the Mac OS X Public Beta, and is shifting an extra 500 copies each day.

Jobs described the feedback received from Mac OS X beta testers as "overwhelmingly positive", and said that Apple has a team evaluating and reacting to the 45,000 messages so far received. **MW**

Jonny Evans

News continues page 22

## Hermstedt takes ISDN to AirPort BaseStation

Hermstedt has taken the wraps off of a new technology designed to give Apple's AirPort users wireless access to dual-channel ISDN. The company has built WebShuttle into Apple's AirPort BaseStation, so that it's possible to access ISDN data-rates wirelessly. Using the device – called AirShuttle – you achieve better bandwidth per user on shared networks.

The £150 AirShuttle requires that an existing AirPort BaseStation (£200 ex. VAT) be rebuilt (costing an extra £50), but Hermstedt will honour Apple's guarantee for a year after fitting. It replaces the existing analogue modem without any further modifications of the host system. Macs must also be fitted with an AirPort Card (£67).

Apple's AirPort technology lets Macs wirelessly connect to the Internet, collect email or share files with other Macs up to 150ft away from networks and modem points. At present, AirPort is limited to 56Kbps Internet access. AirShuttle's ISDN would enable wireless Web browsing at up to 128Kbps speeds. For more on ISDN, see page 97. **MW**

Hermstedt, 020 7242 4061





# Macromedia shows real 4-sight

## Upgrades:

- Dreamweaver 3 to 4, £99.
- Fireworks 3 to 4, £99. Dreamweaver/Fireworks studio to DW/FW studio, £149.
- Dreamweaver 3 to UltraDev 4.0, £199.
- Dreamweaver UltraDev to UltraDev 4/Fireworks 4 Studio, £179.
- Dreamweaver 3 to UltraDev 4/Fireworks 4 studio, £249.
- DW UltraDev 1.0 to UltraDev 4, £99.

## Full products:

- Dreamweaver/Fireworks studio ESP, £349.
- Dreamweaver UltraDev/Fireworks 4 Studio ESP, £499.
- Dreamweaver 4 ESP, £229.
- Fireworks 4 ESP, £229. Dreamweaver UltraDev ESP, £399.

Macromedia has announced upgraded versions of its popular Web-design product range. Version 4 of Dreamweaver, Fireworks and Dreamweaver UltraDev will ship in December. The upgrades include new and improved features, such as layer accessibility and control, and round-trip editing.

Macromedia's drive to build a common interface is evident in this latest raft of releases. All of its major titles are now on version 4 – even though Dreamweaver UltraDev 1.0 shipped in June this year. Macromedia says the versions leap is justified because UltraDev is a full Dreamweaver product that includes database-application development tools.

Macromedia says its upgrades owe much to user feedback and that its standard-interface bid is meant to serve the needs of the design community, by both promoting ease of workflow across its product range and adhering to industry standards.

A number of new and improved features are workflow-friendly. Panels now snap to working-area edges, while editing elements in a single application is also easier. A Launcher Bar has been added to Fireworks at the base of the layout area, allowing a one-click panel launch.

Other features, such as advanced Layer masking and Batch Processing in Fireworks, are more accessible in version 4. The new step-by-step Batch

Process Wizard takes you through time-consuming tasks more quickly, and Firework's animation tools have also been enhanced.

Creating animated GIFs is simpler, as is controlling frame-by-frame animation creation. A new visual frame and movement tool has been added to the upgraded products, allowing you to drag and position animated objects, and to add or remove frames in a single click.

In Fireworks 4, a new pop-up menu creator increases ease-of-use. EPS and FreeHand 9 files can now also be imported. Other new features include: an import Xtra for Director; advanced masking and control of objects within layers; selective JPEG compression; drag-&-drop rollovers; and customizable export controls.

Control and navigation is easier in Fireworks' new Layers panel, and integration with other Macromedia products is more defined. Colour-selection panels are also standardized across the upgrades.

All of Dreamweaver 4's new features are included in Dreamweaver UltraDev 4 – best of which is the new Layout Table mode. Both titles also have an updated Integrated Text editor – improved by many BBEdit-like features, such as Line Numbers, Word Wrap, Colour Coding and a JavaScript debugger.

In Dreamweaver, asset management has been improved, to enhance the effectiveness of its team-

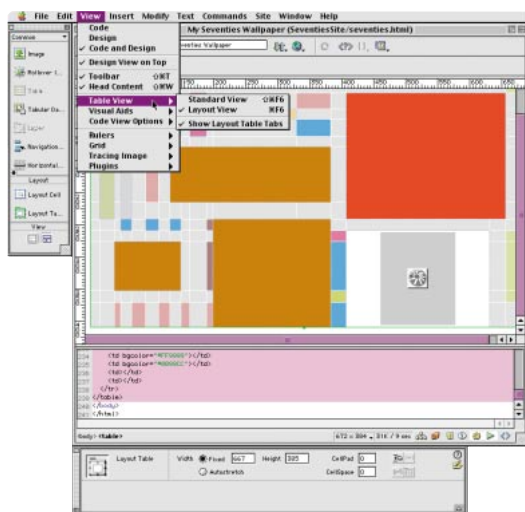
working features, enabling team members to communicate more easily. Site assets can also now be stored in a library feature, with favourites easily accessible via a palette. Site reporting is another new feature in Dreamweaver. You can set custom reports to run for checking errors and common problems throughout sites.

New Flash text features and buttons are also available, allowing creator-editable vector graphics to be created directly in Dreamweaver. In Dreamweaver UltraDev 4 there is much-improved Mac support for connecting to remote servers. Remote Database Connectivity obviates the need to install database-connection drivers on the development machine.

UltraDev has the same improvements as Dreamweaver, plus additional JavaBean support and LiveObjects support, which allows live data to be previewed and edited.

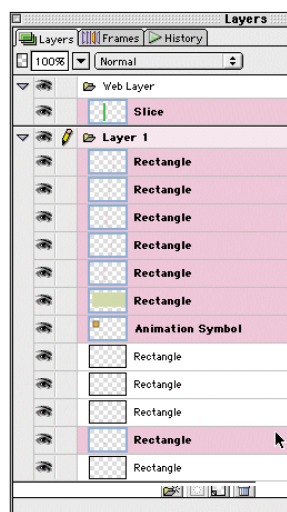
The Live Data mode replaces server-side scripts with dynamically generated output in the design layout. Common Web-page functionality, such as vital navigation links, have been added as pre-set Live Objects to UltraDev 4.

Macromedia has also recently announced a new batch of extensions for Dreamweaver and Fireworks. They are available as free downloads from Macromedia Exchange (<http://exchange.macromedia.com>). **MW**  
**Gillian Thompson**



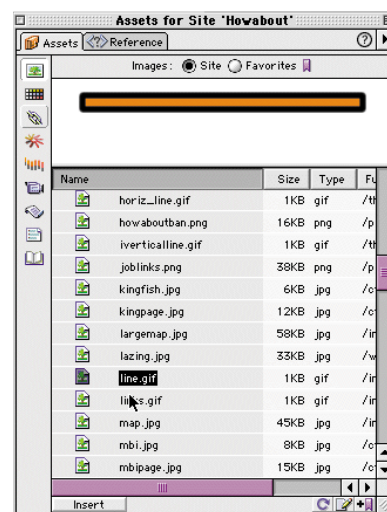
### Tables are turned

In Dreamweaver 4's table-layout mode, designers can draw out tables and cells; Dreamweaver will automatically fill in the gaps.



### Layer player

Control and manipulation of objects in Fireworks 4 layers is now much simpler.



### Nice assets

Dreamweaver 4 stores and organizes site assets for improved workflow and team-based production.





# 'Multimedia to the next level'

QuickTime 5 Preview was released at the QuickTime Live! Conference in October, 2000. Apple's vice president of worldwide marketing, Phil Schiller, announced the Preview during his opening keynote speech at the show.

A Mac version is available for download now. Get it from [www.apple.com/uk/quicktime](http://www.apple.com/uk/quicktime). A Windows version is promised later this year.

The QuickTime Player interface has been refined, gaining Aqua-like interface elements that resemble Mac OS X's bright interface. Additionally, QuickTime 5 Preview offers a host of stability and usability enhancements when run under Mac

OS X, and an improved video codec.

Frank Casanova, Apple's director of QuickTime marketing, said: "QuickTime 5 will take multimedia technology to the next level. A hallmark of QuickTime has been its video quality. Sorenson Video 3 takes it to the next level, and now we are letting third parties extend it even further."

The upgrade has new connection speeds for ADSL and cable modem users, and offers a new music synthesizer with an instrument sound-set licensed from Roland.

QuickTime VR has been enhanced, Flash 4 support is built-in, and – in a major boost for third-party developers – the Component Download feature lets end-users automatically add codecs and other components from a secure Apple server. Several companies

**"QuickTime 5's new technologies enable a new generation of Web-based audio and video solutions to be delivered with greater reliability than ever before"**

– Phil Schiller, Apple vice president

demonstrated products designed to take advantage of this feature.

"QuickTime is being used to deliver the latest in Internet content to millions of surfers around the world," said Schiller. "The new technologies in QuickTime 5 enable a new generation of Web-based audio and video solutions delivered with greater reliability than ever before."

Dynamic Digital Depth (DDD) has developed OpticBoom, a stereoscopic post-processing option. This lets producers convert 2D QuickTime movies into a 3D format viewable through 3D glasses. The conversion is made by defining regions and their distance from camera or viewpoint. Images are then compressed for transmission over the Internet.

## Third parties rally round 5

On2 ([www.on2.com](http://www.on2.com)) announced a plug-in for its VP3 codec. This new codec lets QuickTime users decode On2-encoded content and enables QT Pro customers to encode video for broadband distribution within the application. On2's VP3.2 codec enables full-screen, full-motion, TV-quality streaming video at data rates as low as 200Kbps.

Douglas McIntyre, president and CEO of On2, said: "We are excited to begin this strategic relationship with Apple. We will now be able to offer the QuickTime platform to our

content-rich customers who encode in VP3."

Meanwhile SealedMedia ([www.sealedmedia.com](http://www.sealedmedia.com)) has stolen a world's first with the launch of the first solution ever available for securely selling streaming and on-demand audio and video in QuickTime format. This solution answers the need of content developers seeking to find a secure way to market QuickTime content.

"Apple grew to greatness by combining powerful innovation with a passion for making technology friendly to customers," said Sealed Media's president and CEO, Alan Mutter. "Our work with Apple ensures that we will remain on the cutting edge of media convergence on the Net."

Pulse Entertainment ([www.pulse3d.com](http://www.pulse3d.com)) has readied its real-time streaming 3D technology for QuickTime Media Player, once again using QuickTime's Component Download feature. Pulse technology delivers 3D rendering and audio features, supporting playback of HTTP-streamed audio in sync with interactive animation files.

Internet Pictures ([www.ipix.com](http://www.ipix.com)) announced that its QuickTime component supports the new automatic update feature. The component allows users of any QuickTime-viewing application



## Aqua buttons just for show in Mac OS 9

Although QuickTime 5 is not a native Mac OS X application, the player conforms in part to Apple's Aqua interface guidelines. In the upper left are three standard Aqua window controls that resemble coloured glass beads: Close, Minimize and Maximize. The red Close control works as you'd expect, and green Maximize functions such as the current Zoom box. However, the yellow Minimize control serves only a placeholder function, because Mac OS 9 does not provide for minimizing windows.

to open and navigate spherical panoramas in the iPix format.

QuickTime Pro users can save iPix projects as QuickTime movies.

iPix also promised QuickTime compatibility in its other products: iPix Builder, the company's metered VR-production software, can produce QuickTime VR content; Panoscan2iPIX is an iPix Builder add-on that converts images captured with a Panoscan camera into iPix or QuickTime VR panoramas; and the iPix Photoshop Plug-in lets artists edit iPix images from within Adobe Photoshop.

iPix also announced that it is developing a version of the iPix Viewer optimized for Altivec/Velocity Engine. The company said this offers better performance and improved

navigation and zooming.

Activate ([www.activate.com](http://www.activate.com)) announced that its Content Distribution Network (CDN) now supports the QuickTime format. This means QuickTime users can reliably access the highest-quality streaming-media content through Activate.

"Activate is excited to be working with one of the most dynamic innovators in streaming media technology," said Stew Chapin, senior vice president of marketing, Activate.

Apple has also released a Preview version of QuickTime Streaming Server 3, an upgrade of the software that streams QuickTime content.

## QT rival, Windows Media Player, hits 7

The day after Apple announced QuickTime 5, Microsoft announced its release of a beta version of its media player, Windows Media Player 7 for Mac. The Mac edition of the player is currently at version 6.3. The software competes with QuickTime and RealNetworks' RealSystem as a streaming-media standard on the Web.

Windows Media Player 7 uses a single interface – reminiscent of Apple's shiny QT Player – for audio and video, and supports the latest Windows Media codecs. The codecs offer "near-DVD-quality video at 700Kbps, near-VHS-quality video at 300Kbps, and CD-quality sound at half the file size of MP3," Microsoft claims.

New digital rights management functions – based on the Windows Media Rights Manager – allow developers to encrypt downloadable music to prevent piracy. The beta plays MP3s, supporting the Secure Digital Music Initiative, anti-piracy technology developed by the recording industry.

Download at [www.windowsmedia.com](http://www.windowsmedia.com).



"QuickTime is the most open standard on the Internet," claimed Casanova.

Phil Schiller said Apple's goal for QuickTime was "to provide tools and make the personal creation of video better, to improve Internet delivery and let developers expand QuickTime into new, unexpected areas."

"I hope that when we get together in another year, we'll be showing things so amazing that we couldn't even dream of them this year." MW

Ben Wilson, Dennis Sellers

# ADSL: high-speed Internet beset with problems

High-bandwidth, digital telecoms technology ADSL (Asymmetric Digital Subscriber Line) is available now from BT Openworld and third-party suppliers, but expect long delays before your Mac is connected.

ADSL transmits information at high bandwidth digitally over existing phone lines. Asymmetric means most of the channel transmits downstream to the end-user, and a lesser amount receives data from them. Equipment must be installed at both telephone exchange and the end-user's home.

There's a waiting list – not all exchanges are ready, and British Telecom seems unable to meet demand, although it aims to offer the service to 70 per cent of the UK by 2001. Rob Fielding, channel sales manager at Zen Internet, told *Macworld*: "A waiting list place has been the best most customers can get when they try to order".

MacCentral's Brad Gibson says: "Regardless of carrier, installation takes weeks if not months, even in the US, as third-party companies must use local phone equipment owned by major telcos."

BT promises installation within two weeks, but Phil Worms, Iomart's ADSL product manager, reports: "BT handles the installation, but has done

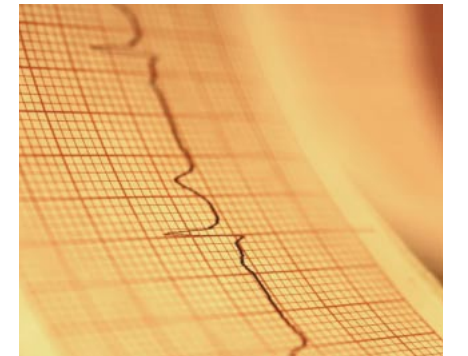
a very poor job. The number of times it has installed and made it work first time is small. Once installed, it can take up to two weeks to get the service going."

Fielding agrees: "BT trained its engineering staff inadequately." BT is trying to resolve these issues, Fielding says: "BT is short of crew, but is recruiting all the time." In the meantime, customers are complaining about the delays.

BT offers three Mac-friendly ethernet-based ADSL solutions for business users, and a (non-Mac) USB service for domestic accounts. A BT spokesman told *Macworld*: "The delay in releasing our (USB) service for Mac is because we are waiting for Alcatel and Fujitsu to deliver Macintosh software drivers to BT." Alcatel and Fujitsu supply BT's ADSL hardware – and therefore software drivers for that hardware.

BT's domestic USB service offers downstream rates of 512Kbps with a 50:1 contention ratio – the downstream data-flow can sometimes be shared between 50 users, making downloads slower than modem speeds. Ethernet-based business services offer faster downstream speeds at up to 2Mbps.

BT charges from £39 per month for the



(512Kbps) domestic service, to £159 for the fastest (2Mbps) ethernet business option. An installation fee is also levied. For more details, see page 97.

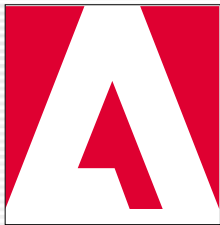
BT has also had administration problems. *Macworld* reader Andy Smith says: "The details of many people who signed up with OpenWorld were saved in a file on one of its Web servers (in April this year) with no encryption or security. According to several journalists who had downloaded this file, this was the second time they had made such a blunder." MW





# Adobe's publishing anywhere

## Adobe and Apple 'close'



Adobe's history has long been intertwined with Apple's, beginning with the introduction of the PostScript LaserWriter printer in 1984. CEO John Warnock is an unabashed Mac aficionado: His primary office machine is a G4 Cube with a 15-inch Studio Display. At home, he uses a Power Mac G4 and Cinema Display, six printers, two scanners and six digital cameras.

Adobe and Apple "work very closely together", he said, adding that Adobe president Chizen "gets along famously with Steve Jobs. We're very frank with one another". The Mac accounts for 35 per cent of Adobe's business.

Asked about Mac OS X and its colourful Aqua interface, he admitted to a philosophical difference with Apple's designers. "In Photoshop, we never put colour icons on the screen," he said. "We don't want the interface to fight with what you do in the machine." Similar criticisms from designers led Apple to add a muted Graphite colour theme.

Even with Apple's Carbon technology, which simplifies the process of moving Mac apps to OS X, "native OS X is a lot of work", Warnock said. "They're huge programs."

First came desktop publishing – technology that revolutionized the print business and earned the Mac a loyal following among graphics pros. Then, in the 1990s, the Internet created a second publishing revolution as companies rushed to launch their own Web sites. Now, in the view of Adobe, we're poised for a "third wave", a new product category that the company has dubbed "Network Publishing."

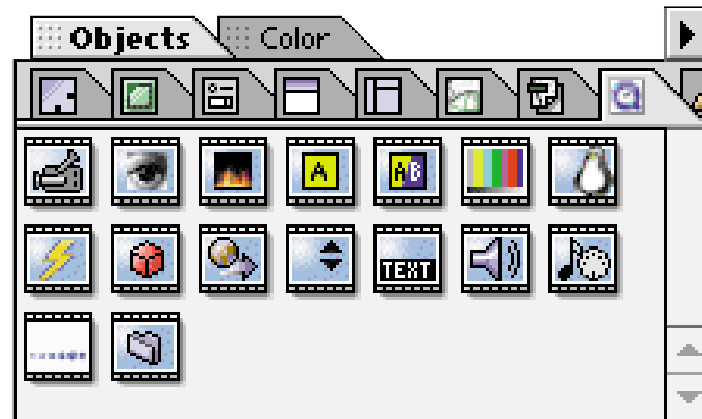
Adobe CEO John Warnock and company president Bruce Chizen presented the initiative at San Jose's Tech Museum of Innovation, announcing: alliances with Nokia, RealNetworks and other vendors; a subscription-based online collaboration service; and a commitment to support standards that will allow seamless deployment of content in print, video, online and on wireless devices. Adobe defined Network Publishing as "visually rich, personalized content available anytime, anywhere, on any device," including Web-enabled mobile phones.

In Adobe's vision, customers will use its products to cost-effectively produce content for print, video, Web browsers and wireless devices.

"Publishing now is more than publishing for print, and more than publishing for the Web," Warnock said. "It's a content aggregation and redeployment scheme that every organization has to have to get a handle on their communication problems."

A video shown during the press conference depicted a scenario where a businessman receives news of a corporate merger on a cell phone and prints the article at a Web-enabled Adobe imaging kiosk. Chizen described another scenario where an ISP, knowing your preference for Italian food, delivers information about local Italian restaurants to your PDA, which includes a GPS receiver that tracks your location.

Chizen pointed to several trends driving the initiative. "Wireless will be pervasive," he said, noting that Nokia expects to sell about 300 million Web-enabled cell phones next year. "That's more than the number of PCs connected today," he said. "And Nokia is just one vendor."



Meanwhile, more computer users have fast Internet connections, and he said that cell phones in Japan will soon be capable of ADSL-speed access. And, "with the adoption of digital cameras, as well as the adoption of digital video, more digital content is being created today than ever," Chizen said.

Adobe plans to gradually roll out Network Publishing technologies in new and existing products, foreseeing a potential \$12 billion market by 2004. Including vendors that don't compete with Adobe, the total market for Network Publishing will be about \$64 billion in four years, Chizen said.

Rob Burgess, CEO of Adobe's bitter rival Macromedia, says he shares Adobe's vision of Network Publishing. He noted that Macromedia has already been discussing many of the same trends, such as the potential for displaying rich media on Web-enabled cell phones.

"I think they're extremely consistent with our vision," Burgess said. "We've both got millions of customers telling us the same thing. It's quite clear that this is what the marketplace wants."

"There's a whole lot of technology that needs to be built over the next five to six years," he said. "Very little of the technology to develop, manage and deploy that content exists today."

### What's involved

The Network Publishing initiative has several components: Adobe will launch a Web site called Adobe Studio that includes free design-related content and a subscription-based collaboration service called Work @ Adobe Studio.

**"With the adoption of digital cameras and video, more digital content is being created today than ever"**

– Bruce Chizen, Adobe president

Jim Stephens, Adobe's senior vice president for e-business, said the latter is essentially an online version of the company's InScope workgroup software (code-named Stilton), which provides facilities for uploading and downloading files as well as tracking the status of each element in a publishing project. InScope, Stephens said, is targeted at large enterprises, whereas Work @ Adobe Studio will be geared toward smaller design workgroups of 10 to 50 people. Adobe applications will have the ability to directly upload files to the system. Several of the company's programs can already upload files to InScope using the WebDAV protocol.

The service is slated to launch in the first quarter of 2001 – in the US and Canada only – at a cost of \$39.95 per month per user, with discounts available for teams.

The paid-up services will be available worldwide after thorough testing of the North American model, explains Adobe UK marketing director Ricky Liversidge.

While the adobe.com Web site will remain as an information library, the company will continue to develop

# and anytime

its UK Web site ([www.adobe.co.uk](http://www.adobe.co.uk)) with case studies and extra community activities, explained Liversidge.

Free content areas – many of which will be available worldwide – will include forums, portfolios, articles, online design critiques and access to paid design-related products and services.

Liversidge expects chargeable services – such as PDF creation – to be available from Adobe in the UK "at some stage in the future", when "complex testing and tax issues" are sorted out.

### Sticking with standards

Adobe will continue to support industry standards, including Extensible Markup Language (XML), Portable Document Format (PDF), Scalable Vector Graphics (SVG), Synchronized Multimedia Integrated Language (SMIL), Wireless Markup Language (WML) for handheld devices that use the Wireless Access Protocol (WAP), and Compact HyperText Markup Language for i-mode devices.

Eventually, Adobe applications will use XML to produce graphics that incorporate metadata describing their content. This is necessary in order to enable the flexible exchange and display of information on various

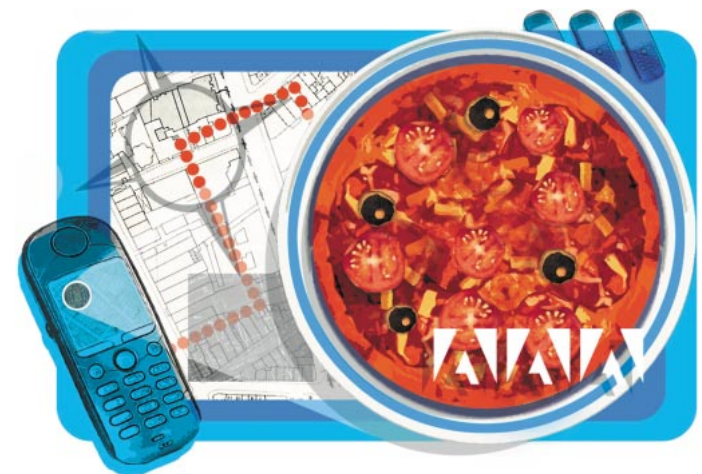
devices, the executives said.

Along with InScope, Adobe plans to develop new Network Publishing server products, including one that dynamically generates Web graphics. Asked if Adobe will add Mac OS X support to its servers when the new OS ships next year, Chizen said that the company would base any platform decisions on user demand. Warnock said that in general, porting Unix server software to OS X should be a "piece of cake" given the new OS's Unix underpinnings.

Both Adobe and Macromedia have adopted Macromedia's Flash and the SVG format, but Macromedia clearly favours its own technology, while Adobe is the primary SVG champion.

"Both technologies may ultimately be important," said Macromedia's Burgess. "But SVG has a lot of hockey to be played yet." He said that SVG currently has only limited animation capabilities and also pointed to the hefty 3.5MB browser plug-in needed to view SVG online.

Macromedia does plan to follow Adobe's lead in supporting the WebDAV protocol for submitting jobs to production servers. "WebDAV is great because it's a standard," Burgess said. Adobe uses WebDAV as a key element in its InScope workflow management software.



### Industry alliances

Adobe and Nokia said they will develop a WML 1.1 authoring environment for GoLive 5. The software will include a graphical user interface that emulates a mobile phone.

RealNetworks announced that it will incorporate Adobe's SVG Viewer into RealPlayer. In addition, Adobe plans to offer a SMIL extension for GoLive that will be available for download by the end of the year. RealSystem makes extensive use of SMIL, a layout standard for streaming media. Adobe also plans to provide RealVideo and RealAudio export functions in the next version of its Premiere video-editing software – which is rumoured for announcement this month.

Stephen Beale

## Quark chief technology officer quits

**Tim Gill – founder, chairman and chief technology officer of Quark – has resigned. He plans to dedicate his time and money to philanthropic pursuits – focusing on the Gill Foundation, which funds gay and lesbian groups, the arts, and public broadcasting. Gill has already contributed \$165 million to the fund.**

Quark's European marketing manager, Gavin Drake, said: "Tim Gill is no longer an owner or chairman of Quark; and is no longer involved in running the company."

Until now, ownership of the company has been split between Gill and Quark's CEO, Fred Ebrahimi. It is believed that Ebrahimi has purchased Gill's 50 per cent, becoming outright owner of the company.

Gill had been gradually stepping back from the day-to-day business of the company, and his resignation has confirmed months of industry speculation. Drake said: "He ceased to act as chief technology officer several months ago. Everyone in

Quark has a great deal of admiration and respect for Gill, and wishes him the very best in the future. "Gill expects Quark to move forward with its next generation of products."

### Desktop brains

Asked about Gill's departure from arch rival Quark, Adobe CEO John Warnock observed that: "Tim was the technical brains of the place" and admitted that QuarkXPress "blew PageMaker away".

However, Warnock contended that Quark's software is "aged, past its time." Adobe, of course, is promoting its InDesign page-layout software, which uses a new code base, but it has yet to make a serious dent in Quark's dominant market position.

Armed with a \$2,000 loan, Gill launched Quark in 1981. He developed DTP page-layout application QuarkXPress. Ebrahimi joined in 1986 with a \$100,000 investment to take over business-management responsibilities.

Quark continues to dominate the page-layout software market. Quark's annual revenue is estimated at \$500 million. The privately held company employs over 700 people in nine countries.

Spokesman Glen Turpin said that Quark will probably not name a direct replacement for Gill. Kamar Aulakh, vice president of technology, will take on Gill's software development responsibilities; and Jurgen Kurtz, director of product management, will assume a higher-profile role as a company spokesman, Turpin said.

Quark is readying version 5 of XPress (expected early next year), and is preparing to release QuarkWrapture, a new package design program (see page 119).







# Motorola shoots for moon on Apollo

**M**otorola gave the chip industry a sneak peek at Apollo – its fourth and final version of the G4 microprocessor – at October's Microprocessor Forum.

Apollo promises to hit speeds of up to 1GHz, but is not yet in production. Motorola's senior technician, David Bearden, guided Forum-goers through the inner workings of the new design, which is based on the same architecture as Motorola's V'Ger – the 700MHz third-generation G4 microprocessor announced at last year's Forum.

The real breakthrough on Apollo is

its 20 per cent performance increase, thanks to its use of Silicon-On-Insulator (SOI) technology. Bearden suggested this could push Apollo beyond the 1GHz mark.

He claimed the SOI performance boost is possible without pipeline changes, or shrinkage of the lithography. Motorola stressed that SOI technology does not require new manufacturing equipment.

Neither Apollo nor V'Ger have reached full-scale production, but Motorola European marketing communications chief Paul Clark said: "It's safe to say that both V'Ger and Apollo will ship in 2001."

## Compatibility

Like today's PowerPC G4 chips, Apollo will support AltiVec/Velocity Engine instruction-sets and is compatible with G3 and G4 chips.

Clark said: "Apollo is designed to be flexible; it can run at lower speeds for lower power consumption. We wanted the microprocessor to be of use in both the embedded systems and computer markets."

"Our customers need that kind of flexibility."

Apollo makes use of Motorola's now-perfected 0.18-micron copper manufacturing process, offers 36-bit memory addressing, and supports up to 64GB of physically addressable memory. Other features include on-chip 32K instruction and L1 cache, a

256K L2 cache and a 256K data path between the two. It also supports an off-chip Level 3 cache of up to 2MB, with a 5.3GB transfer rate. Its power consumption will be less than 23W at 1GHz, and Motorola boasts that the chip can trade frequency for energy conservation – meaning it will use less than 10W at 666MHz.

Clark added: "Theoretically, it's possible to have software-based on-board controls that set a computer's speed to 666MHz for optimum speed versus power consumption."

"We're trying to deliver a chip that can meet the needs of a wide number of customers."

The company recently announced that it is shipping the 7410 processor – its second-generation G4 family. This runs at about 5W and returns speeds up to 550MHz.

Clark said: "We expect this chip to be used in desktop computers, and for high-end use, such as in radar installations."

Industry watchers believe Apple will take advantage of the new generation of G4. Apple's PR manager, David Millar would not comment on unreleased products."

Motorola's 7410 chip can return speeds up to 550MHz, with an ultra-cool power consumption of only 5W. For Apple's recent speed-hike promises, see page 20.

MW

Jonny Evans



## Interplay hit-games make a play for the Mac

**I**n an exciting deal for Mac gamers, PC gaming giant Interplay has granted United Developers exclusive worldwide licensing rights to its MacPlay trademark and MacPlay.com domain name. United Developers will now trade as MacPlay.

MacPlay now has the rights to publish Mac ports of Interplay's PC titles, including *Icewind Dale*, *Baldur's Gate II: Shadows of Amn*, *Giants: Citizen Kabuto*, *Sacrifice* and

*Starfleet Command Volume II: Empires at War* all of which will be released in 2001.

*Baldur's Gate II* is one of the top-selling titles for the PC platform, the other titles range from role-playing games and space combat simulations to magic and mystery dramas.

Ron Dimant, MacPlay's leader and CEO of Ritual Entertainment, said: "This is only the beginning. The first part of our 2001 line-up

is titles like *Giants* and *Sacrifice*. These will be in high demand among those who 'Think Different'."

Jason Whong, PR Director of MacPlay said: "Macintosh gamers will have a lot to look forward to in 2001."

Founded in the early 1990s, MacPlay was the Mac division of Interplay. United Developers have taken the name to leverage the identity built for it at the time. Dimant said: "With

the iMac being the most compelling home entertainment appliance, everything is primed for MacPlay to become the industry leader."

Apple's vice president of worldwide developer relations Clent Richardson said: "MacPlay's commitment to Mac OS X will provide our customers with the best gaming experience any platform has to offer."

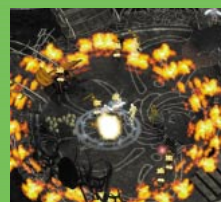
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Dominique Fidele



*Game on for Mac*

Top PC titles such as *Icewind Dale* (above) and *Baldur's Gate* (below) will ship to the Mac.





# Apple education drive a safe BETT



Apple will use the UK technology-in-education show, BETT, as a springboard for its new education marketing strategy for Europe. The event, to be held at London's Olympia from January 10-14, will be a showcase for Apple Learning Solutions.

Designed for teachers, ALS comprises Apple Learning Interchange (ALI), a Web-site resource; the Apple Learning Series (ALS), an integrated suite of software applications and curriculum content; and Apple Learning Professional Development (ALPD), which offers Internet-based staff-development courses.

Apple regional director (UK and Ireland) Brendan O'Sullivan told *Macworld*: "Our US colleagues have spent a fortune on Apple Learning Solutions, and it's my vision to bring that to the UK."

ALI has over 30,000 members and hosts QuickTime TV video-content, including field trips, technology demonstrations, and presentations by education experts.

ALS consists of four titles, including Secondary Web Publishing and Secondary Multimedia. O'Sullivan revealed that iMovie programmes will also feature at BETT. He said: "Media-

centred learning such as iMovie helps kids to prepare for the next economy."

Apple's education drive has been endorsed by UK teachers. A typical view was voiced by London-based Web-design teacher Sav Kyriacou, who said: "I'm interested in what BETT exhibitors can offer but am particularly interested in Apple. I think its products are fantastic. Apple used to be hot on education and now is reaching that level again." BETT is expanding its education and technology show for 2001.

## Innovative

BETT organizer Emap Education promises that the show will be more innovative than ever. New developments include the Future Skills area, which is devoted to past, present and future automotive engineering.

Another is Learning Futures, devoted to robotics, cybernetics and virtual technologies. The event will also see technology students compete to build, design and race customized Grand Prix entries in regional heats across the country.

There will also be a Special Needs Village, showcasing solutions for those with learning difficulties.

Exhibitors will include Sherston software, which will showcase its range of maths software products for toddlers. Dialnet will debut learnall.net, which allows teachers and pupils to develop a personalized online database.

Rickitt Educational Media (REM) is launching a line of educational software, including chemistry and biology titles for secondary school students. REM and Edutech are also co-launching Literacy Maker and Numeracy Maker for the Department For Education and Employment.

A yet-to-be-announced government minister will open the BETT Seminar Programme on January 10. There will be 45 themed sessions held over the four days.

There's a 50 per cent discount for tickets bought before December 1, after which tickets are £23.50 per seminar and £11.75 for additional seminars. Tickets bought online are £1 cheaper.

Last year, BETT attracted 360 exhibitors and 22,120 visitors from 65 countries. Attendees can pre-register for tickets on 0870 7511 458. Go to [www.education-net.co.uk](http://www.education-net.co.uk) for more information.

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**Dominique Fidele**

## UK film giants take starring role in iMovie-making lessons

UK schoolkids recently worked with world famous film-industry figures to make movies for the AppleMasters programme that was held on October 5. A total of 13 children were chosen from schools in the British Isles to produce their own two-minute movies.

Under the guidance of actors Joseph Fiennes and John Hurt, and film director Ken Russell, the children shot footage on London streets using digital video cameras.

The footage was then edited at London's Royal College of Art using iMacs and Apple's iMovie software.

The collaborative efforts of pupils at Bedford High School and AppleMasters can be viewed at [www.bedfordhighlife.co.uk/AppleMasters/applemasters2.html](http://www.bedfordhighlife.co.uk/AppleMasters/applemasters2.html).



*iMovie stars*

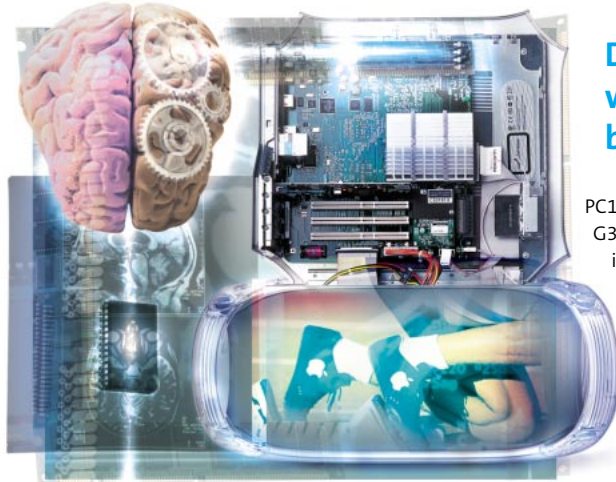
Actor John Hurt and director Ken Russell lend their filmmaking know-how to youngsters who are using iMovie to craft footage.







# The Mac's next memory now



**DDR RAM is the low-hanging fruit and would be an inexpensive performance boost for Apple's next systems**

PC100 RAM with the blue-&-white G3, and continues implementing it in all Power Mac G4s, PowerBooks, and even iMacs, although sometimes in different form factors. With a 64-bit datapath running at 100MHz, PC100's memory bandwidth works out to 800MB/second. PC133 tops out at a theoretical max of 1.06GB/second.

"DDR RAM is similar to existing SDRAM," said one hardware developer who requested anonymity. "The chipsets are available and could easily be worked into the Mac's UniNorth controller." As for Rambus: "It would make little sense to pay for a complex proprietary memory design that has not tested well and that Apple is unfamiliar with," he said. "DDR RAM is the low-hanging fruit and would be an inexpensive performance boost for Apple's next systems."

## Modest gains?

Although faster RAM provides speed benefits, they are not necessarily as dramatic as the specs would suggest. Because the CPU generally runs much faster than memory, hardware designers use an L2 cache, a small (256KB to 1MB) block of memory, to store frequently used data. The cache runs on its own bus at half the speed of the CPU, much faster than the main memory bus. A good caching scheme usually results in 90 per cent of CPU data requests being cache hits – data is in the cache and is served up quickly – with the remainder being misses – the data needs to be retrieved from main memory.

PowerPC chips usually have larger caches than their PC brethren to minimize performance hits, and in both environments, the benefits of faster RAM are generally small. Using PC133 to increase memory performance in a Mac would produce an actual performance gain of only four per cent. But doubling memory bandwidth with DDR would lead to more-significant performance gains. Faster RAM could help RISC

processors, such as the PowerPC, more than a CISC processor, said Mike Siebert, strategic marketing manager for DRAM at memory vendor Micron. Code written for RISC processors is generally larger than CISC code, increasing the possibility of cache misses. That's one reason why PowerPC caches tend to be larger.

Complicating the scenario is the emerging development of DDR and Quad-Data Rate SRAM, the memory type used in high-speed caches. It's unclear if these will be used with PowerPC, since both Motorola and IBM have indicated that they are moving to on-die caches that run at the same speed as the CPU. IBM's latest G3, the 750CX – used on the new iBooks – has a 256K on-die cache, but no support for further cache. Motorola's Apollo G4 design features a 256K on-die cache and support for an off-chip L3 cache (see "Motorola shoots for moon on Apollo", page 28).

## DDR benefits

DDR RAM, which began development in 1996, works almost exactly like existing PC100 or PC133 DRAM, the difference being that it's double clocked. Because it can move twice the data per clock cycle on the same 64-bit datapath, it effectively doubles bandwidth. Unfortunately, DDR is not backward-compatible with existing PC100 or PC133 RAM.

Currently, there are two varieties of DDR RAM: PC1600 and PC2100, the numbers indicating the memory bandwidth: The PC1600 runs at 100MHz while PC2100 runs at 133MHz. Siebert said that developers are trying to get it to 200MHz, and that it's likely to go even faster in the near future.

Currently, DDR carries a 20 per cent price premium over PC133 SDRAM. But Siebert believes that prices will come into parity over time. In its favour, DDR requires 2.5v as compared to regular DRAM's 3.3v specification. "Manufacturers are reporting power savings of about

40 per cent when using DDR RAM as opposed to PC133," Siebert said.

## Not dead yet

Manufacturers are reluctant to dismiss Rambus entirely. "We see Rambus and DDR RAM co-existing for the time being," said Echo Sarlya, a Micron spokesperson. "The market is segmenting, but SDRAM (PC100 and PC133) will still make up the majority of the RAM market next year. Micron is working on Rambus products, but none are currently in production."

Samsung and Hyundai are also developing Rambus products. However, the top three RAM makers privately complain about the difficulty of getting tolerable yields of RDRAM. Micron, Samsung and Hyundai are all working on DDR RAM products.

Intel is supporting Rambus by including it on some of its high-end motherboards. Rambus is also included in Sony's new PlayStation 2.

David Read

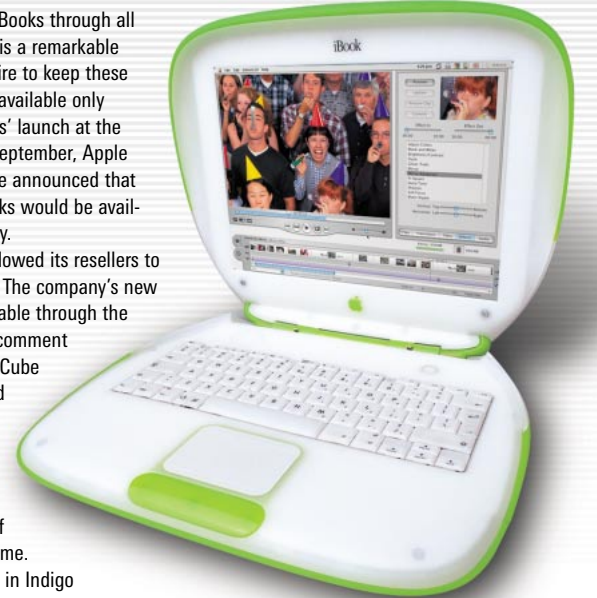
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## Key Lime iBooks now on general sale

Apple is now offering Key Lime iBooks through all of its authorized resellers. This is a remarkable turnaround from Apple's stated desire to keep these models away from its resellers and available only direct from itself. On the new iBooks' launch at the Paris-based Apple Expo Europe in September, Apple CEO Steve Jobs was booed when he announced that the striking Key-Lime-coloured iBooks would be available from the online AppleStore only.

Now, Apple has relented and allowed its resellers to offer the greener-than-green iBook. The company's new optical Pro Mouse is also now available through the normal channels. Apple would not comment on dealer-rumours that its 500MHz Cube – currently AppleStore-only – would soon go on general sale as well.

The 366MHz iBook costs £1,249; the 466MHz iBook Special Edition is priced at £1,499 (both including VAT). Both of these models are available in Key Lime. The standard iBook is also available in Indigo blue; the SE in Graphite.



MW

## Office 2001 free extras



Microsoft has released three special downloads for its recently released Mac Office 2001 suite of business applications.

Microsoft Entourage Value-Add Scripts, Microsoft Remove Office Tools, and Microsoft Office QuickView are available free at [www.microsoft.com/mac](http://www.microsoft.com/mac).

QuickView enhances speed of use. The Entourage scripts make repetitive tasks go faster. And the Remove Office Tools uninstalls Office 98 and 2001 components and system preferences.

Mac Office 2001 costs £410 (ex. VAT), or £209 to upgrade from Office 98. MW

ILLUSTRATION: JAMES WALKER

# Corel promises CorelDraw 10, Bryce 5, Painter 7

Corel's vice president of development and marketing (creative products), Ian LeGrow, has announced Corel's plans and launch dates for the development of its Mac products.

LeGrow oversees the development of CorelDraw, PhotoPaint, Corel Rave, Kai's Power Tools (KPT), Bryce, Painter, and KnockOut.

He told *Macworld*: "We are committed to our Mac products. We've already released a Bryce 4.1 update, and will be releasing a Painter 6.1 Public Beta in November, with the final update available by the end of the year."

On Corel's acquisition of Mac products, he said: "The story begins in August 1999, with Corel's acquisition of Knockout. We had decided to make a strong push into the Macintosh space, so we chose to acquire some best-of-breed products. In December last year we got a call from MetaCreations, and worked with them to organize the acquisition of Painter, Bryce, and KPT. So now we have a line of products widely recognized by Macintosh creatives."

Industry observers have cast doubt on the future of Corel's creative product-range, in the light of the company's dire financial straits over the past year. Now, with a \$135 million cash injection from Microsoft, its future appears more secure.

Mac OS X is looming, and Corel is engaged in prepping applications for it. "We are working on CorelDraw 10 for Mac OS X," he told *Macworld*. "We already have Bryce working on the OS. We have had very few problems Carbonizing applications for Mac OS X, as 80 per cent of



*Bryce to see you*

Corel has already shown Macworld that work is well underway to ensure its creative products run on Mac OS X. Here we see the Bryce landscape generator on the new OS.

"One new filter is based on the Navier-Stokes Fluid Dynamic differential equation. This models the flow of liquids, and filters based on the equation can take an image and reproduce the effect of its being reflected in rippling, disturbed water. We have several filters based on this equation that are nearing completion."

Other applications are also under development, he revealed. "We have already begun working on Painter 7.0, and the product is scheduled to ship in late spring or early summer 2001. Bryce 5.0 will be released at the same time as part of our push on Mac creative products."

Corel is aiming to release the Mac version of CorelDraw 10 in March or April 2001, LeGrow said. Underlining the importance in which Corel holds the Mac platform, LeGrow promised that "after the release of CorelDraw 10, all our Mac and PC versions will be released simultaneously on both platforms".

LeGrow gave the biggest hint yet that Corel is putting the Microsoft millions to work, but spared the details: "We do have something really exciting on the imaging side that will be released in spring."

LeGrow also discussed CorelRave, part of the CorelDraw 10 suite. Corel has designed Rave for creating images for the Web, similar to Macromedia Flash. "People use our product to create images, adding behaviours in Flash. We think it offers a much better set of drawing tools than Flash. It does about 50 per cent of what Flash does, but does that 50 per cent better."

MW



# New Apple UK chief on sales crusade



**"The sharp, crisp Apple image will create a non-threatening atmosphere for new users"**  
– Mark Rogers, Apple regional director (UK and Ireland)

Steve Jobs remains optimistic about Apple's future sales. The company's current customer base numbers 20-23 million, and Apple has sold about 13 million Macs since Jobs' return as Apple CEO in September 1997: "That leaves about nine million Macs out there that are old and ready to upgrade," he said. "We do not feel as if we have saturated the market."

Thomas Lot, general manager of Apple France, echoed Jobs' statements: "Of every 100 iMacs sold, 46 are bought by people who did not have a computer previously. If 23 per cent of homes have a computer, there are 77 that don't. We regard ourselves as a start-up. We have room to grow."

In order to boost sales, Apple has reorganized its European distribution systems. The company is focusing on the consumer and education, while continuing its successful work in the creative markets. The strategy means a more active high-street presence, with point-of-sale displays designed to emphasize Apple's focus on usability and design, and with Mac-compatible software at the forefront.

Recently appointed Apple regional director (UK and Ireland), Mark Rogers confessed that the current sales

situation is "disappointing". "Where we really fall down is at that point where we touch the customer," he told *Macworld*.

## Friendly

The "old, ugly sales environment" will be replaced by "one in the sharp, crisp image of Apple".

"It will create a non-threatening atmosphere for new users," Rogers explained.

The UK boss revealed that the new sales environment will feature the top 50-selling Mac software titles. This active push will, for now, be focused on outlets that sell Macs. Rogers promised that, once that has been achieved, Apple will try the same in software-only stores.

Rogers worked recently in Apple's Asia-Pacific region. His policy of improving stores in Singapore worked wonders, he claims. Improved Mac hardware stores saw a four-to-five-fold increase in visitors, as well as a



50 per cent increase in sales

Apple has now created teams to advise retailers on point-of-sales displays, in a bid to deliver an improved customer experience. The company has developed retail training courses and is implementing a reward scheme. Apple wants UK sales forces to be educated and motivated about its products.

"Reaching a double-digit market share is obviously an objective for Apple."

MW

Jonny Evans

## Napster in Mac MP3 music move

Napster, the controversial MP3 file-swapping software that, until now, was only available on Windows, is coming to the Mac.

Napster has posted a public beta (1.01b) of its peer-to-peer music file-sharing software for free download from [www.napster.com](http://www.napster.com). It is based on Macster, a Napster-compatible Mac-client that Napster acquired from Blackhole Media.

Shawn Fanning, 19, created Napster last year. Originally he intended the software as a solution

to search for, find, and post MP3s. The software lets users chat online, view each other's collections and share titles, and now boasts over 30 million users. Napster incurred the wrath of the five recording industry giants – Universal, EMI, Sony, Warners and BMG – and of the Recording Industry Association of America (RIAA). The RIAA took legal action on behalf of the five companies. An injunction – the effects of which would close the company down – is still outstanding.



As we went to press, Napster announced its new relationship with one of the big five music firms, Bertelsmann (BMG). BMG and Napster have developed a membership-based service that will provide file-sharing capabilities, while providing payments to the rightsholders.

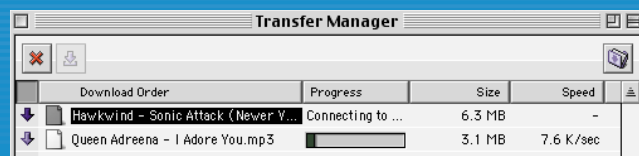
In addition, BMG is preparing to withdraw its lawsuit against Napster – and has offered the company financial aid.

In its way, Napster has hastened the music businesses' entrance into

the online world, though the recording industry continues to claim that Napster infringes on its copyrights.

The Napster for Mac beta will also run under the Mac OS X Public Beta, but is unsupported. A note reads: "You will be running Napster under Mac OS X at your own risk. Support is planned for Mac OS X, once we have the development tools."

"We hope this is resolved quickly, and look forward to taking advantage of this great OS." MW  
Jonny Evans







# Sales the Holy Grail for Apple

IMAGE COURTESY OF DIGITAL VISION



## Breakdown of Apple's Q4 2000

### Unit sales by territory

Americas: 688,000  
Europe, Middle East, Africa (EMEA): 224,000  
Japan: 156,000  
Asia Pacific: 54,000

### Area revenue (\$m)

Americas: 1,099  
EMEA: 369  
Japan: 281  
Asia Pacific: 86

### Product sales (units)

iMac: 571,000  
iBook: 89,000  
G4 Cube: 107,000  
Power Mac G4: 269,000  
PowerBook: 86,000

### Product revenue (\$m)

iMac: 593  
iBook: 121  
G4 Cube: 165  
Power Mac G4: 527  
PowerBook: 198  
Software & peripherals: 266  
Total Q4 revenues: 1,870  
(Total Q4 revenues for 1999 were 1,336)

Apple's market capitalization took a hammering when it issued a profit warning prior to announcing its year-end, fourth-quarter (Q4) results on October 18. Its share price fell from \$53.50 to \$25.75 in one day's trading (see Macworld, November, Page 32). Apple stock was worth \$22.31 as we went to press.

Macworld spoke with outgoing Apple UK MD Brendan O'Sullivan – and his successor, Mark Rogers – about the Apple share-price situation.

O'Sullivan said: "We've enjoyed 40 per cent growth as a company across the world. We shifted 1.122 million Macs in Q4, and we're far outperforming the market."

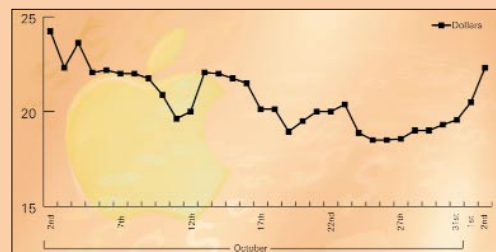
Apple's European sales have also grown year-on-year. O'Sullivan revealed that a total of 4.558 million Apple machines shipped in Y2K; 224,000 of these in Q4, compared to the 1999 Q4 figure of 102,000.

A recent report by International Data Corporation (IDC) into Western Europe marketshare during the Q2 2000 showed Apple with a 3.5 per cent share.

"We hold 5 per cent of the western Europe consumer market in Q4," revealed O'Sullivan. "Our strongest area is France, where we have 7 per cent of the market."

Mark Rogers, Apple's new regional director (UK and Ireland) told Macworld: "We have absolutely the right products. We've bought technology to market that no one else has today: iMovie, desktop video, and the affordable, entry-level £649 iMac."

IDC's figures show that Apple is at number six in the



consumer market, is first in education, and seventh in worldwide vendor ratings. Compaq, Hewlett Packard, NEC, Gateway and Fujitsu are ahead of Apple in the consumer space. The consumer market accounted for 30 per cent of Apple's worldwide revenues in 2000, reflecting the increased importance of consumers to Apple two-and-a-half years after the release of the revolutionary iMac.

Rogers added: "We've been the technological leader for 20 years and now have an increased focus on consumer-level machines. For some time we had no product for the consumer space. We're currently focused on where we sell the hardware, and software visibility is crucial."

To regain investor confidence, Apple knows it must maintain its technological advantage – hence its \$380 million investment in research and development in 2000 and \$314 million in 1999. The company is also aware that sales have to increase in the consumer sector.

O'Sullivan said: "We must enhance our sales in the consumer and education sector, and continue to develop our lead in the creative markets. We believe that Apple will do better by focusing its efforts on key areas, rather than trying to grow sales in all sectors." MW

Jonny Evans

## Mandich retires, as Vedoe rises

October saw two key high-level changes at Apple, with senior vice president of worldwide sales, Mitch Mandich, resigning and Cheryl Vedoe becoming vice president (VP) of education marketing and solutions.

Previously VP of Apple's education division, Vedoe will report directly to Apple CEO Steve Jobs. Jobs said: "The education market is a top priority for Apple, and we intend to regain market share in 2001. With her extensive experience in education and technology, Cheryl is a strong addition to Apple's education team."



Mandich (pictured left), is to retire at the end of December. Tim Cook, Apple's senior vice president of operations, will assume Mandich's responsibilities until a replacement is found.

Jobs said: "Mitch has been a key member of Apple's senior management team during the past three years, and has led our sales efforts with vigour and integrity. We will miss him."

Matt Sargent, an analyst with ARS, told MacCentral: "Whoever takes over from Mandich has got to figure out how they're ever going to get beyond the long-term niche market status that has kept Apple afloat." MW

## Business briefs

- Apple hard-drive suppliers Maxtor and Quantum are merging their hard-drive businesses, creating a new Maxtor that will be the world's largest supplier of hard drives.
- Lexmark returned \$927 million revenues in its third financial quarter 2000 – and announced it is to cut 900 jobs in Kentucky, relocating its laser printer manufacturing operations to Mexico and China, saving \$100 million by 2002.
- MetaCreations' sole-surviving subsidiary, Metastream, is renaming itself Viewpoint. MetaCreations is to be collapsed and merged into the new company, subject to shareholder approval.
- Universal Music is to trial a subscription-based digital-music download service. EMI and Sony are trialing similar services. Universal's tracks will be offered in Real Networks proprietary format via third-party online retailers.
- IBM is investing \$5 billion in its semiconductor division, including a \$2.5 billion investment in building the world's most advanced chip-making factory in New York.
- Motorola announced net earnings in the last nine months of \$1,561 million, up from \$814 million for year-ago period.
- Apple subsidiary, FileMaker, returned \$111 million profit in fiscal year 2000. Revenues climbed 29 per cent over 1999.
- Seven million UK households – or 28 per cent – are connected to the Internet, says telecoms regulator Ofcom.



See 'Macworld' – inside 'Serious Software' – on this month's cover CD

# Product News

## Handspring colours Visor

**H**andspring has launched the Visor Prism and Visor Platinum handhelds. The Visor Prism is Handspring's first colour personal digital assistant (PDA). It will have a 16-bit – 65,536 colours – colour display on an active matrix LCD. A Motorola 33MHz processor, and 8MB RAM come as standard.

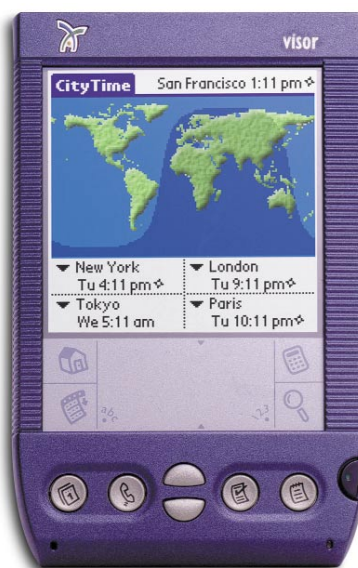
The Prism will run on a Lithium-ion rechargeable battery, which will provide two weeks of "normal" use per charge. Handspring claims the Prism is the fastest Palm OS-based handheld on the market, being at least 50 per cent faster than the Visor Deluxe.

The Visor Platinum also features the faster Motorola processor, but has an 8-bit greyscale display. The handhelds both boast Handspring's Springboard expansion slot. The Prism is available in cobalt blue, and the Visor Platinum in metallic silver.

Both units are available from Handspring's Web site ([www.handspring.com/uk](http://www.handspring.com/uk)), they will be available on the high street this month. The Visor Prism costs £340; the Visor Platinum £212.

Also announced recently from third-party developers are Springboard modules designed to take advantage the Prism's colour, including a GPS module from GeoDiscovery, an MP3 player from Good Technology, and a colour game-pack from Pocket Express.

**Handspring, 020 7309 0134**



### Colour match

*Handspring's latest Visor is the first by the company to feature a colour screen, so users can take full advantage of the Eyemodule digital-camera expansion pack (see Reviews, October 2000).*

### Video gap bridged

ARC has launched its Mac Video-CD player application, MacVCD, which will play Video CDs through a conventional CD-ROM drive. It supports large screens and multiple video-CDs. To play movies the application must be launched before the VCD is inserted into the CD-ROM drive. Registration costs \$10. A limited trial version is included on *Macworld's* cover CD.

ARC Company, [www.arc.com.bc.ca/MacVCD](http://www.arc.com.bc.ca/MacVCD)



### Pikachu printing

Hewlett-Packard is giving away a free Pokemon Project Studio CD with every DJ840C ink-jet printer. The Pokemon software contains 250 projects and over 600 graphics, including greetings cards, invitations and calendars. The printer costs £84.

Hewlett-Packard, 0870 606 4747



### Cube adapts to PDAs

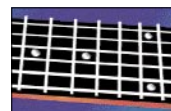
Griffin Technologies is shipping the CubePort universal serial port adaptor for the G4 Cube. It uses the modem port to provide board-level compatibility and supports personal digital-assistants (PDAs), modems, digital cameras, MIDI and lab equipment, and serial printers. It costs £49.

Alta Technology, 0207 622 6606

### King of the blues

eMedia has released Blues Guitar Legends CD-ROM. It guides guitarists through the rudiments of blues guitar, with lessons drawn from original recordings by blues guitar legends, such as BB King. There will be a demo of the software on the January *Macworld* CD. The full version costs £16.

eMedia is also running a competition: buy any of its software from Guildsoft, send the registration card back, and one user will win a US Fender Stratocaster worth £770. Guildsoft, 01752 895 100



## Canon's camera capture

Canon has launched the £799 PowerShot G1 digital-camera. The 3.3-megapixel camera has 12 shooting modes including Program, Shutter priority, and Aperture priority. It comes with a full manual.

The camera is USB-friendly, so images can be downloaded to any USB-equipped Mac. The camera's functions include auto exposure, adjustable shutter-speed controls and white-balance. Its lithium-ion battery will take up to 800 shots.

Canon has developed a range of accessories for the G1, including a 1.5x tele-converter and 0.8x wide-angle converter to enhance the lens' abilities.

**Canon, 01892 837 619**



## PowerBook joins expansion big league

Mobility Electronics is shipping the EasiExpansion T35 PowerBook PCI expansion tower. It has five drive-bays – three PCI-expansion slots and two USB ports – and doubles-up as a docking station, enabling a PowerBook to connect to a monitor and keyboard.

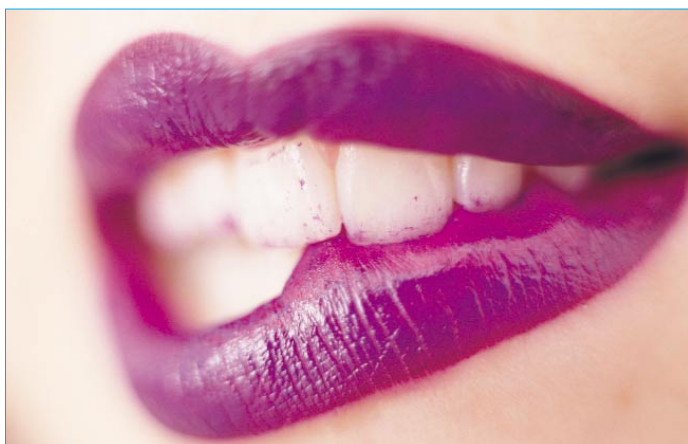
The £481 device uses Mobility Electronics' Split Bridge technology – which is over 100 times faster than USB, according to the company. It claims the product is compatible with all FireWire-enabled PowerBooks.

**Mobility Electronics, 0800 085 0064**



continues page 41





### Imagesource's mega-bite

Imagesource has released Grande 1, its autumn collection of royalty-free images. The CD contains images taken from across the Imagesource range, letting designers choose the CD collections or images they want. Individual CD collections, taken from Grande 1, cost £299, with individual images starting from £29. Imagesource images can also be viewed online ([www.imagesource.com](http://www.imagesource.com)). Imagesource, 0800 0373 928

### Business charts

Adrenaline Software has upgraded its chart-creation application, Adrenaline Charts Pro, to version 1.5. The app now offers a QuickTime-based animation engine, and detailed effect and transition controls. It outputs to multiple formats, including PICT, TIFF and Photoshop EPS. It costs £276. Upgrades cost £105. Ad Hoc, 00 33 1 47 06 05 05



### Pixel perfect

Toshiba is launching its megapixel PDR-M60 digital camera. The £399 camera features a 2.3x optical and 2x digital zoom, five-mode flash, multi-shot mode and USB connectivity. It boots-up in two seconds, and has a USB connection. Toshiba, 01932 828 828



### LG puts spin on LCDs

LG Electronics is launching its 15.1-inch FL577LH Flatron LCD monitor, which has a rotating screen. Users can work on documents without scrolling up and down, or splitting the screen. Software supplied with the monitor automatically rotates the screen image. The £595 monitor has a contrast ratio of 200:1 and 16.7 million colours. The monitor offers a 120-degree viewing angle. LG Electronics, 0870 607 5544



### Sony's printer to dye for

Sony has launched a £2,557 SCSI A5 printer that boasts a 30-second print time. The UP-D50 dye-sublimation printer delivers A5 images with over 16.7 million colours. The £107 UPC-540 is a self-laminating colour-printing pack that ships with the printer. It's available in matt, glossy and textured finishes and has a 40-second print time. The printer has a resolution of 1,480-x-2,048. Sony, 01932 816 340

# Microsoft tracks optical mouse

Microsoft has released the Trackball Optical and WheelMouse Optical, both ergonomically designed for comfort, precision and control, according to the company.

The WheelMouse Optical (right) and Trackball Optical both use IntelliEye technology, which replaces traditional gears and pins with an optical sensor that tracks movement at a scan rate of 2,000 times per second. Microsoft claims the IntelliEye won't wear out over time.

The £29 Trackball Optical (left) has five customizable-buttons and a scrolling wheel. Each button can perform common tasks, such as moving forwards or backwards in a Web browser.

The £21 WheelMouse Optical is compact, and will suit either left- or right-handed users. It features two "old style" mouse buttons and a mouse wheel for navigational tasks – such as scrolling and zooming.

Microsoft, 0345 002 000



### Wheel improvement

Microsoft's WheelMouse (above) means an end to cleaning dirty mouseball sockets. The Trackball Optical (left) uses the company's IntelliEye technology to sense the ball's movement.

# Epson's laser family

Epson has launched the AcuLaser C8500 family of full-bleed A3 colour laser-printers. They can print at up to 6ppm in colour, or 26ppm in mono. The printer family is capable of resolutions up to 9,600-x-600dpi.

They will also automatically alter line screening and colour correction on each page, according to the company. The printers can handle a variety of paper sizes, from B5 up to true A3 with full bleed and crop marks. The AcuLaser C8500 range can also handle paper thicknesses of up to 220gsm. The networkable (10/100BaseT ethernet) units contain a 266MHz controller processor, and can carry up to 768MB on-board memory. A 400-sheet paper tray comes

as standard. Four models are available, including the £3,319 Standard AcuLaser C8500, which comes with 64MB RAM and a 400-sheet paper tray.

The AcuLaser C8500PS offers all the standard functions, with 256MB RAM and Adobe PostScript 3. It costs £3,999. The £5,149 AcuLaser C8500DT offers 192MB RAM, two additional 500-sheet paper trays, a duplex unit and a hard-disk drive.

The AcuLaser C8500 PSDT has PostScript 3, two paper trays, duplex unit, 384MB RAM and a hard-disk drive. It costs £5,849. Epson, 0800 220 546



### Laser targeting

Epson's AcuLaser C8500 family of laser printers is aimed at networked businesses. The printers come with up to 768MB of memory.

continues page 43

# Eizo's touch of class

**E**izo has released the FlexScan L350P – a 15-inch touch-screen LCD monitor. The monitor combines Eizo's display technology with a ClearTek 3000 analogue touch screen from MicroTouch.

The ClearTek 3000 is resistant to water, grease, dirt, corrosion and static, and the manufacturers claim the monitor is good for up to 150,000 touches.

The £1,109 FlexScan L350P has a resolution of 1,024-x-768 pixels with a contrast ratio of 300:1. The scaling function expands less-than-maximum resolutions to a full-screen display. The picture can then be refined with an image-smoothing function.

ClearTek 3000 includes CleanScreen, an antibacterial protectant, which is bonded to the touch-screen surface offering protection for the screen's life. The FlexScan L350P has a detachable base and carries its power supply inside the panel. It also has a slot for a security cable.

The L350P has two power-saving features – PowerManager and an off-timer function. PowerManager reduces power consumption during idle periods. **Eizo, 01483 719 500**



**Touchy feely**  
Eizo's touch-screen LCD comes with built-in power saving and an antibacterial protectant.

## CDs & Books

### Web-design guide

Dreamweaver 3 Studio Factory describes the basic functions of Dreamweaver 3, such as creating Web pages with text, graphical images, framesets and links, to more advanced functions, including cascading style sheets. It cost £15. Computer Bookshops, 01217 066 000



### Softase teaching aid

Softase is shipping the latest version of Textease Studio, a selection of Information and Communication Technology tools designed to simplify teaching. Textease Studio comprises Textease 2000, a word-processing and DTP package; Textease Primary, a desktop-publishing package with colourful icons; Textease spreadsheets, a numeracy tool; and Textease Database, used to store pictures and numbers. Textease Studio costs £149 for a single-user licence; multi-user licences cost £25 per additional user. Softase, 01335 343 421

### Reading blast

Blaster has released four titles. Reading Blaster Ages 7-9, 8-10, 9-11 and 9-12. All the CDs incorporate educational maths and reading programmes. Each title costs £17. Havas Interactive, 01189 209 100



### Maths Wiz ships

Wolfram Research has released the £50 Calculus Wiz, a software product for first-year A-level students. Wolfram claims that 90 per cent of calculus homework can be solved by the software. It also comes with an electronic-text book. Wolfram 01993 883 400

# Orange fires-up iBot

Available from Orange Micro, the iBot FireWire Desktop Video Camera (right) is among the first FireWire desktop video-cameras to hit the market. The FireWire connection allows the iBot to transfer pictures up to 33 times faster than USB alternatives and offers digital-camcorder quality according to Orange Micro.

Designed as a webcam or a security camera, it's suitable for teleconferencing, or for making movies on a tight budget. It comes in two versions – the MSRP Standard, which costs £105 and has no microphone, and the £129 MSRP Pro version, which includes a microphone and additional software. **AM Micro, 01392 426 473**



# CD 'photocopier' set for January launch

O'Dixion will release the DigiMatic DM50 and DM100, a series of automated CD photocopyers – or cloners – next January.

The DigiMatic series can be accessed by any computer on a local-area network (LAN).

The £3,165 DM50 will produce customized

CDs in terms of both content and top-surface printing. The £4,131 DM100 adds the ability to clone both the data and the surface graphic from existing CDs. The DigiMatic is currently capable of 1,440dpi ink-jet printing.

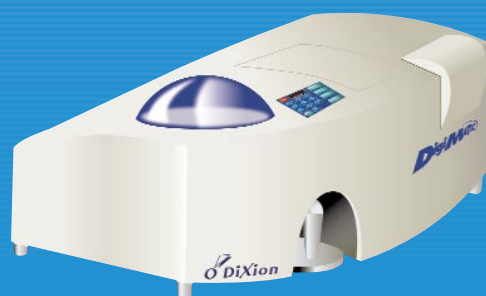
The DigiMatic range will write at 16x speed, which means a 650MB CD can be copied in four minutes.

It has a 20GB drive, is built on a Pentium motherboard, and uses Sanyo's CD-RW 16-x-10-x-32x for writing.

**Computer Connection, 01423 704 700**  
**Dynatek, 01256 400 000**

### Making an impression

An artist mock-up of what the DigiMatic CD cloner will look like. It comes with an in-built Epson printer, two CD drives and has "one-touch" controls for easy CD burning. It will ship next January.



continues page 44



## Modem on the move

Digicom has released the Palladio USB GSM, an external modem with a USB interface that can send and receive faxes, email and data using the GSM network. The modem is aimed at users who have no PCMCIA slots or serial ports on board – iBook owners, for instance. It supports Mac OS 8.6 or later and selected GSM phones from Nokia, Ericsson, NEC and Siemens. It costs £99. AM Micro 01392 426 473.

## Speaker boon

TEAC has designed a set of speakers to complement Power Macs and iMacs. The £35 PowerMax 300/iC range of see-through boxes are available in Blueberry, Graphite and Tangerine. Controls are front panel mounted. The speakers overall dimensions are 120-x-175-x-195 mm. Microwarehouse, 0800 181 332.



## Speak and be heard

Plantronics has released four digitally-enhanced USB headsets for Macs, the DSP-100, 300, 400 and 500. They offer digital-quality stereo and microphone capabilities to make sound clearer and speech more accurate, according to the company. The £95 DSP-100 is designed for speech recognition; the £110 DSP-300 is for audio functions and MP3 playback. The £120 DSP-400 offers the same as the 300, but folds down for easy storage and transport. The £140 DSP-500 is a stereo gaming head-set. Plantronics, 0800 410 014



## Read the script

The current issue of *MacScripter* magazine reveals how to select a file or folder with a cool dialogue window. It offers two useful scripts, and will teach novice AppleScript users how to alter them. The magazine is free and on our CD. [www.macscripter.net/magazine.html](http://www.macscripter.net/magazine.html)



continues page 46

## Behind the screen

*The Diamond Pro S95F (below) "cuts down glare" with an ultra-flat screen. The MultiSync 1800 (right) has built-in colour calibration.*



# NEC's monitor treble



**N**EC-Mitsubishi has released three monitors – the Multi Sync CRT S95F, the Diamond Pro CRT 2045u and the Multisync LCD 1800. The Multi Sync S95F is based on an ultra-flat 19-inch dot-mask tube. It has a usable screen area of 366-x-275 mm and a resolution of 1,280-x-1,024 pixels with an 85Hz image refresh rate. The model's dimensions are 442-x-453-x-455mm. It weighs 22Kg, and costs £249.

The Diamond Pro 2045u – a 22-inch CRT monitor – is aimed at professional designers. It offers a Diamondtron-NF (Natural Flat) tube. The 2045u has a maximum resolution of 2,048-x-1,536 pixels at a refresh rate of 75Hz, and a recommended resolution of 1,600-x-1,200 pixels at a refresh rate of 95Hz. It costs £719. It also offers two up- and three down-stream USB ports, and comes with a three year on-site warranty.

The Multisync LCD 1800 is an 18.1-inch LCD display with a proprietary colour algorithm that offers both automatic colour-calibration and six-axes colour control. This means red, green, blue, yellow, magenta and cyan colours may be set individually using an on-screen menu.

The LCD 1800 is a wide-angle TFT display – offering both a vertical- and horizontal-viewing angle of up to 160 degrees and a maximum resolution of 1,280-x-1,024 pixels at 75Hz. It costs £1,699.

**NEC-Mitsubishi, 0845 121 9200.**

## Vision thing

Toshiba has released the TLP-B2 LCD projector. The projector will handle both XGA (Extendible Graphics Array) and SXGA (Super Extended Graphics Adaptor) display formats. The projector has a brightness of 1,000 lumens.

It's compatible with Macs, DVD players and VCRs, and features digital keystone-correction that compensates for the effect of projecting to a flat surface at an angle. It also has a manual zoom and focus controls, and offers a 400:1 contrast ratio. The projector costs £3,148.

**Toshiba, 01932 828 828**



# Notable mini-studio

Tascam has released the US-428, its combination Portastudio and professional recording device. The US-428 offers 24-bit digital-audio in and out, with hands-on control of audio software, using faders and controls for mixing, recording and sequencing.

The £382 device links to the computer using USB. It offers either two balanced mic/line XLRs, or two balanced quarter-inch jack inputs. The inputs can support individual stereo- and mono-signal transfer, at either 16-bit or 24-bit resolution. Two digital input/outputs are housed on the rear panel of the unit.

Up to four channels and a stereo bus can be mixed to the host computer using the USB connection.

The US-428 is compatible with all the major



## Sound studio

*Tascam's Portastudio is compatible with all major hard-disk recording and sequencing software, and has 24-bit digital-audio in and out.*

hard-disk recording and sequencing packages, and comes with Steinberg's Cubase VST Audio Recording/Midi Sequencing software and drivers.

**Tascam, 01923 438 880**

### Apple Updates

Apple has simultaneously released both the North-American and

International-English versions of its Apple modem updater.

The update makes the internal modem in the PowerBook G3, iMac and Power Macintosh G3 and G4, more stable, as well as accelerating data-throughput. US customers have also received a PowerBook firmware update, and an update to Mac OS Runtime for Java (MRJ), among others.

Apple has updated its Game Sprockets to version 1.7.5. These software libraries drive game and USB input devices, joysticks game pads and mice. The update provides multiple-monitor performance boosts and delivers improvements for graphics-intensive games. Apple recommends its customers don't install North-American-English OS system components on International-English systems.

Apple has a policy of not granting third parties, such as *Macworld*, the rights to carry Apple updates on cover CDs. For links on emerging updates, visit [www.macworld.co.uk/updates](http://www.macworld.co.uk/updates).

### Third-party updates

Bryce 4.1

Courtesy of Corel, the update offers a volumetric-shading mode, which enables the creation of realistic-looking clouds

and various gaseous forms.

### FWB CD-ROM

#### Toolkit 4.0.1b

This CD-access enhancer, essential for owners of Apple clone machines, adds support for new drives, including devices from Hewlett-Packard and LaCie, and offers stability improvements.

### Digital Performer 2.72

Another maintenance update for the digital-audio and MIDI-sequencing production tool. This one improves stability.

### Toast Standard/

#### Deluxe 4.1.1

This update offers bug fixes, improved updater, "burn proof" support on compatible drives and digital audio playback under Mac OS 9.

# Hansol debuts high-end CRTs



### Pro options

The 700F flat-panel monitor (above) is wall-mountable and can be used as a TV. The 19-inch 920D (left) may need an adaptor to work with certain Macs.

Hansol is increasing its share of the professional-monitor market, with the launch of a 19-inch CRT monitor and a 17-inch flat-panel. The 700F is a flat-panel monitor costing £1,399, is wall mountable, and has a built-in TV tuner and integrated stereo-speakers. It offers a resolution of 1,280-x-1,024 pixels at 75Hz, and has a viewable screen size of 17 inches, with a viewing angle of 160 degrees. It has dual VGA-inputs, and an S-VHS connector as standard. It carries a three-year warranty, and is aimed at the professional design and corporate market and the emerging broadband home-entertainment sectors.

The 19-inch, flat-screen CRT 920D costs £259, and uses a Samsung "Dynaflat" cathode ray tube. This has a resolution of 1,280-x-1,024 pixels at a refresh rate of 85Hz. It can achieve a maximum resolution of 1,600-x-1,200 pixels, also at a refresh rate of 85Hz. It has a dot-pitch of 0.25mm, and a viewable screen of 18 inches. A £19 Apple monitor adaptor may be required for some Macs. Hansol is selling this monitor with a three-year on-site warranty.

Hansol, 01252 360 400



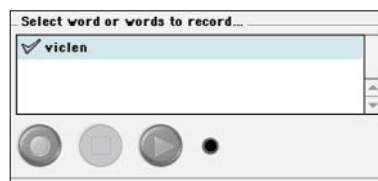
# IBM speaks volumes

IBM is shipping a USB Microphone Edition of its ViaVoice for Mac voice-recognition program. The software remains the same as the standard ViaVoice program (see Reviews, May 2000), but

instead of a colour-coordinated jack-plug microphone, it comes with a colour-coordinated USB microphone. This allows iBook owners, who do not have a jack-plug socket, to use ViaVoice.

The new USB edition – which requires Mac OS 9.0.4 – costs £76; the standard jack-plug version costs £59. Owners of the standard edition can use a USB microphone, but they must buy one separately and install Mac OS 9.0.4.

IBM, 01475 555 047



### Mic check

IBM's USB microphone for ViaVoice means road warriors can make the most of speech-recognition software.

# Belkin turns-on to USB

Belkin has launched its USB keyboard, video and mouse (KVM) switch.

The OmniView four-port USB KVM switch will control four USB computers, whether Mac, PC or both, from a central control point, using one keyboard, monitor and mouse.

It features a built-in four-port USB hub, which connects computers to a wide variety of USB peripherals. These can be collectively linked to a selected port, together with the

keyboard, monitor and mouse signals.

Ports can be switched using a keyboard, or the on-screen display menu.

The product has USB time-delay technology built-in, so it's possible to simulate USB hot-swapping. Belkin is offering a free three-button USB mouse with each unit. The OmniView four-port USB KVM costs £199.

Belkin, 01604 678 300





Xerox's legendary PARC research body is in trouble – and ripe for an Apple rescue



## Things bury PARC

**A**n old friend of Apple is in trouble. The Xerox PARC (Palo Alto Research Centre) is short on cash and requires a level of funding that its parent company can ill-afford. It isn't up for auction, but there's a need for a large cash injection if it is to continue its good work.

For those not in the know, Xerox PARC is the place responsible for inventing and developing ethernet, the graphical user interface (GUI), and the laser printer, among other tech wonders.

It started life in 1970, when Xerox gathered together a team of world-class researchers and gave them the mission of creating "the architecture of information". The researchers have proved that such long-sighted investment into IT research can pay off. It's estimated that as much as 55 per cent of Xerox's profits are derived from technologies developed at PARC.

### Missed opportunities

In the 1970s Xerox was a corporate giant that had what amounted to a monopoly on the lucrative photocopier market. The investment in PARC was to make sure that Xerox would always be at the forefront of technology – which it some ways it has achieved. Unfortunately, Xerox also missed out on many of the best technologies, and failed to take advantage of its unique position. While PARC invented the personal computer – complete with mouse, GUI and ethernet networking – it neglected to make a product that it could sell.

If you're thinking that this personal computer sounds familiar, you're right. If the rumours are to be believed, Apple stole Xerox's technology to make the first Mac. This is isn't true: Apple paid for the technology with \$1,000,000 of its shares. For this, Steve Jobs and his Apple entourage got to spend a day gazing at the crown jewels of PARC – the Dorado computer running the Smalltalk graphic interface.

The Dorado was the big brother of Alto – the first personal computer in history, which was never made commercially. Steve Jobs was so excited about the mouse and GUI that he left PARC without looking at the ethernet network connecting the computers. Macs didn't come out with ethernet for another few years due to this oversight.

Whichever way you slice it, Xerox has been instrumental in shaping the way modern computing works. Unfortunately, now that photocopying isn't such a big deal, Xerox hasn't the same prestige in the printing world, and its fortunes are on the wane. Consequently,

the future of PARC is hanging in the balance.

Xerox doesn't want to sell it to hungry venture capitalists, who'll just strip it of saleable technologies, yet the annual \$60 million bill for running it is now making a dent in Xerox's profits. What Xerox would like is help from business partners in contributing to PARC. If no partnerships are forthcoming then PARC really could be up for sale. This would be the end of an era in computing – and is, frankly, unthinkable.

### PARC strife

Which is exactly why Steve Jobs and Apple should chip-in to financially assist Xerox and its research facility. Paying half of the \$60 million yearly bill would ensure PARC's continuation – and would, presumably, give Apple first dibs on any commercially viable technology in the PARC pipeline. As well as keeping PARC alive, this could well help keep Apple ahead of the competition.

It could even solve the problem that has plagued PARC since its inception: getting products to market.

Since his return to Apple, Steve Jobs has been responsible for making a host of futuristic technology a reality. Think of the iMac, the Cube and the Cinema Display. They all needed somebody with Jobs' vision to make them happen. Just as Jobs once liberated the GUI from 10 years' of sitting around the PARC labs, he could now liaise with PARC on projects that are still in their infancy.

### Research development

Xerox may need some convincing that Apple is the ideal partner for PARC. Research is something best done without insane pressure being brought to bear by notorious control freaks like Jobs. But the plus side is that PARC becomes better at capitalizing on its research. If it could make a profit from selling its technologies, then its future would be assured.

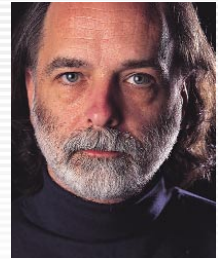
Come on, Steve, give PARC a break. It could be something valuable for Apple – and just imagine if the competition gets in there first. Nobody wants to see a Xerox/Microsoft PARC, or, worse still, the whole thing dismantled.

PARC has a unique place in the industry and all technology companies would mourn its passing – or cheer its saviour. There's a chance of a PR coup for someone – and Apple's making enough profit so that a little donation to such a worthy cause would not break the bank.

MW

**"PARC has a unique place in the industry, and all technology companies would mourn its passing"**

Apple's plummeting share price hints  
at a collective loss of perspective



## Time to take stock

According to the American author Kathleen Norris, life is easier to take than you imagine. All you have to do is "accept the impossible, do without the indispensable and bear the intolerable". And, since complaining – or at least enlightened questioning – is taboo in most modern technology-driven businesses, the acquiescence of an unimaginative money-trench media culture of low expectations creates the comfy illusion that, out in the Land of the Yahoos, the living is easy.

Deliberately 'dumbing down' the educational system to prevent any future 1960s-like upsurges of radical utopianism seems to have enabled most of us to bear the intolerable – because we simply don't know any better. Worse than this, many of us don't even want to know. Occasionally, a few of us experience a vague realization that someone has screwed us out of something. But usually, we never muster the zest or bile to find out who did the screwing and what we were screwed out of.

I mean, when there's freak flooding, crumbling rails and government intransigence over a brain-rotting disease does it really matter that Apple's shares for a single quarter came in one cent lower than analysts' estimates? Should anyone really care that \$170 million profit isn't enough for a pack of greedy stock-market drones playing short-term digital monopoly instead of doing something meaningful with their lives? Is their opinion something that 'the rest of us' should believe to be a significant cosmic indicator of the value or viability of the Macintosh? Or is it simply that making connections and thinking for ourselves is too disturbing for our media-shortened attention span?

As an experiment, let's Think Different. Apple projected 50 per cent year-on-year growth, but instead got 40 per cent year-on-year growth. Forty per cent growth is still ahead of the industry average – so Apple lost just half of its market cap in one day because of greed-hyped news that, while its market share is growing, it's not growing as fast as expected. So why is this big news? Why is the industry always in such a hurry to put the boot in? In the same week that Apple's \$170 million profit was grabbing the disaster headlines, shares of the world's second-largest vendor of PCs fell more than 5 per cent. Compaq forecast fourth-quarter earnings of 37 cents a share – below analysts' expectations of 41 cents a

share. That's four cents less than analysts' estimates, compared to Apple's one cent less. So why isn't the media writing off Compaq? For that matter, why hasn't the press pack checked out Dell – or the rest of the Wintel mob – to see whether their profits are big enough to avoid a major panic.

OK, Apple still isn't that good at getting its message across to the hoi polloi. But its active base consists of about 20 to 23 million users and it's sold about 13 million Macs since Jobs returned, leaving about 9 million Macs out there that are old and ready for upgrades. It's recently launched an introductory-level iMac priced £649 including VAT. As has nearly always been the case, every level of business and industry can and does use Macs to support and sustain themselves.

Despite received wisdom to the contrary, there are literally tens of thousands of software packages written for the Mac, and Apple's machines are faster and more capable than competing kit. And lest we forget: who made GUIs cool? Who gave birth to the PDA phenomena? Who opened the road to laptops and actually made home computers something you'd actually like to have in your home? While Apple may have fallen behind the PC market in terms of share price, the company is ahead of many firms in terms of Web traffic and as a Web-authoring platform.

A recent report found that Apple commanded approximately 1.2 per cent of the entire Web audience in terms of unique visits to the company's home page. While that figure may seem small, the rival Intel.com site reached only 0.4 per cent of the entire online audience. That percentage translates into 1,118,000 unique visitors to Apple's home page in a single week – besting IBM.com, Intel.com, and Gateway.com.

Perhaps, as the utopian polymath Buckminster Fuller, suggested, humans have an annoying habit of trying all the stupid approaches before hitting on the intelligent ones. But how many do we have to swallow before we realise that accepting the impossible, doing without the indispensable, and bearing the intolerable is no way to live? Thinking different, making connections and understanding belief cannot be a third-party add-on.

Take my advice: forget about Apple's or anyone else's share price and listen to poets like John Ashbery: "Scramble the 'Believer' buttons. Silence the chickens. We have more important things, like intelligence." MW

**"Scramble the 'Believer' buttons. Silence the chickens. We have more important things, like intelligence"**





## Macworld Rating

★★★★/9.0-10.0 = OUTSTANDING

★★★★/7.0-8.9 = VERY GOOD

★★★/5.0-6.9 = GOOD

★★/3.0-4.9 = FLAWED

★/0-2.9 = UNACCEPTABLE



## Adobe Photoshop 6.0

**Manufacturer:** Adobe Systems (020 8606 4001) [www.adobe.co.uk](http://www.adobe.co.uk)

**Pros:** Streamlined interface; improved text-handling; vector graphics; Liquefy tools.

**Cons:** No zoom option in Liquefy window; uneasy integration between Photoshop and ImageReady.

**Min specs:** PowerPC; Mac OS 8.5; 128MB RAM.

**Price:** Full version, £375 excluding VAT;

Upgrade from version 4.0 and above, £119 excluding VAT.

**Star Rating:** ★★★★★/9.0



### Caricature creation

The Liquefy command provides powerful, yet precise, morphing tools. Any effects that have been applied can be gradually undone, but this window can't be magnified

Photoshop 5.5 was a bit of a mess. It had some good points, certainly, but Adobe hadn't quite figured out how to adapt the print-oriented Photoshop to the demands of Web graphics. The result was an untidy attempt to integrate Photoshop and its Web-graphics stablemate, ImageReady.

But for Photoshop 6.0, Adobe has gone back to basics. There are new Web-graphics features, of course, but this upgrade primarily concentrates on improving ease of use and adding powerful image-editing features.

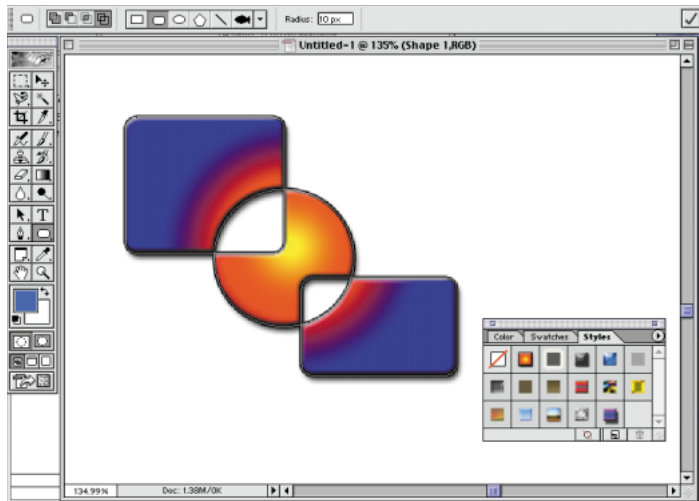
### Extra options

The first thing you'll notice is the small, but effective, improvements to the interface. Running along the top of the main workspace is a new Options bar. This is used to display options and controls relating to the currently selected tool. It's context-sensitive, so it automatically updates itself as you switch from tool to tool. For instance, if you select the Paintbrush, the Options bar will display controls for adjusting the size or style of the brush.

Photoshop's vast array of features and tools has caused it to become increasingly cluttered in recent years, with a confusing array of palettes floating around on screen. The Options bar instantly does away with many of these, and it also includes one additional feature that helps tidy up your working environment. However, you'll need to

### Mapped out

ImageReady has also been upgraded, with improved controls for creating image maps.



### Tooled up

Layer styles can be combined with the new vector tools to create complex vector-graphics effects. A context-sensitive options bar at the top of the screen cuts down the number of floating palettes.

have your monitor set to a resolution of at least 1024-x-768 pixels to use this feature.

When your monitor is set to this resolution – or higher – a small window is displayed, on the far right-hand side of the toolbar, called the Palette Well. You can drag any of Photoshop's tabbed palettes into the Well and the palette will automatically shrink down so that only its tab remains visible. When you need to use the palette, simply click on the tab, and the palette springs back to full size.

### Vector graphics

One of the other big advances in this upgrade is the addition of vector-graphics tools to Photoshop's traditional bit-map tool-set. Tucked neatly into the main tool palette are two new options: a pen tool, for drawing freehand bézier-curves; and a Shape tool that allows you to create a range of standard geometric shapes, such as rectangles, ellipses and polygons. When you select the Shapes tool, the Options bar displays settings that allow you to fix the size and proportions of a shape, or to create more complex shapes by using the "custom shape" button. Clicking on this button opens up a sub-menu containing an assortment of vector-graphics clip art, such as stars, arrows, and simple button-shapes for Web graphics. You can select any of these for use in a document, and can also save vector-graphics files.

When creating vector shapes you also have the ability to use "pathfinder filters" similar to those found in Adobe

Illustrator. These combine vector objects in various ways, in order to create more complex shapes. Vector shapes can also be used as "clipping paths" to cut out parts of an existing image, or used as layers, to which you can apply gradients, patterns or other tonal effects.

### All-in-one

These new tools won't have you throwing your copies of Illustrator or FreeHand into the bin just yet, but they will save time by allowing designers to quickly add a wide range of vector graphics to their work without having to leave Photoshop and create the graphics in a separate program.

There's been a problem with Photoshop's text tools in the past. They've been so clumsy and limited that users were often forced to prepare text in a vector-graphics program and then import it into Photoshop. The other alternative was simply to give up on Photoshop and do all typographical work using the more powerful type tools in layout programs such as QuarkXPress. There are some good, third-party plug-ins developed for working with text in Photoshop, but these can't compensate for the weakness of its text-handling features. But at long last, Adobe has completely rewritten Photoshop's text-engine, making it more powerful and easier to use.

The first – and most needed – improvement is the simple ability to type text straight onto an image, rather than having to enter the text into a clumsy dialogue box as we've had to do for

years. Clicking on the Text tool activates a cursor that allows you to draw a new text box onto your image. At the same time, the Options bar displays controls for selecting the font, size, style and anti-aliasing method. You can also activate two additional palettes that contain more detailed settings for character- and paragraph-level formatting, such as line spacing, indents and alignment.

Text boxes can be rotated and resized simply by using the mouse to grab the handles on the corners and edges of the box. However, the text within remains editable at all times, so that you don't have to go back and start again if you discover a spelling mistake or some other changes that need to made to the text.

Finally, the Options bar includes a Warp button that allows you to apply a wide range of distortion effects to text. This button activates the Warp Effects dialogue box, which includes a series of predefined effects, such as bulge, fisheye and twist. However, each effect provides additional slider controls that allow it to be modified – altering the degree of distortion, rotation, or horizontal and vertical stretching. However, you can still edit the text simply by clicking on it with the text tool.

Text isn't the only thing that can be warped and distorted in Photoshop 6.0. One of the program's most powerful new editing features is the Liquefy command. This is similar to some of the morphing effects found in MetaCreations' Goo, but provides designers with much greater precision and control.

### Liquid gold

Tucked away at the bottom of the Image menu, the Liquefy command activates a window that contains a copy of your current image. This window has its own toolbar, containing a series of brush options, such as warp, bloat, pucker and twirl.

The warp brush simply drags pixels in the direction of the brush strokes, while the other brushes push or pull pixels in a variety of other ways. You can alter the size of the brushes in order to increase or decrease the strength of the liquefying effect, and can also superimpose a grid over an image to act as a guide during editing.

There's a special freeze brush that allows you to fix areas of an image into place so they're not affected by any of the liquefying brushes. This will be useful for creating caricatures, where you want to distort only specific

features of someone's face.

If you decide to undo a distortion altogether you can use the standard ⌘-Z keyboard shortcut to undo an action, but there's also the option of using the "reconstruction" brush to slowly reverse distortions. This allows you to rewind to just the right degree of distortion without having to start again from scratch.

The Liquefy tools are great fun to play with, but they're also very powerful editing tools. You can create exaggerated effects and caricatures, of course, but can also make more subtle changes to an image, such as tucking in someone's double chin or giving them a digital nose-job.

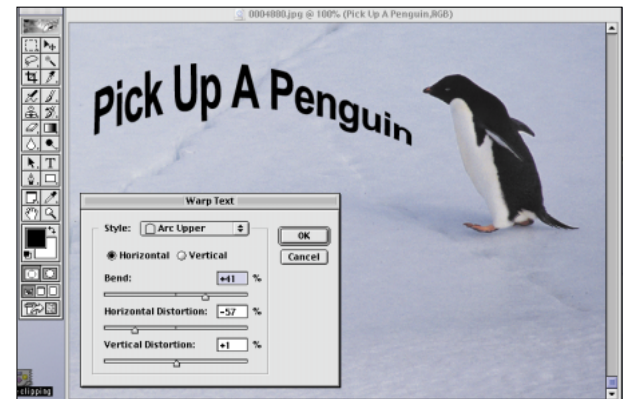
However, this sort of subtle retouching would be easier if there was a magnification control within the Liquefy window. Even so, the Liquefy command has great potential – as long as you can stop yourself getting carried away and wasting hours fiddling with pictures of friends and colleagues.

On a more productive note, Photoshop 6.0 finishes off with an increased selection of new Web-graphics features, such as improved slicing controls and the ability to create and save "layer styles". Admittedly, layer styles aren't exclusively Web-oriented, but they work in a similar fashion to the styles found in Adobe LiveMotion and are ideal for creating Web-graphics, such as buttons and rollovers.

You can create text or vector shapes on a new layer, and then apply one or more effects, such as a drop-shadow, emboss, or a gradient colour to the layer. Once you've achieved the desired effect you can save it as a "style" that can instantly be applied to any other graphics or text that you create. However, these styles don't affect the underlying text or graphics, so you can still edit them at any time and the style that you've applied will automatically be updated to reflect the changes made.

Like LiveMotion, Photoshop includes a selection of ready-made styles, but Adobe has been careful not to make LiveMotion redundant by limiting the number of ready-made styles in Photoshop. LiveMotion also provides a greater level of complexity in the styles that it can create, as well as having animation features that set it apart from both Photoshop and ImageReady.

And, of course, ImageReady is the Web-specialist in this graphics double-act. Now upgraded to version 3.0, ImageReady has improved controls



for creating image maps and rollovers. One nice feature is the ability to create secondary rollovers, in which a mouse action on one part of a Web page causes something to happen somewhere else on the page. And you can also save rollovers as a style in the same way as layer styles, allowing you to quickly create multiple rollovers.

The rather clumsy image-map controls of ImageReady 2.0 have been replaced by a new Image Map palette, which allows you to simply draw circular, rectangular or polygonal hot-spots straight onto an image. You can also use layers to create more complex image-maps, as elements within a layer can be used to define the shape or appearance of hot-spots.

We're still not entirely happy about the way that images are swapped back and forth between Photoshop and ImageReady, as it's still easy to get confused about which version of a file is being edited in which program. And with both programs now having so many features in common, you can sometimes grind to a halt while deciding which program to use for a particular task.

### Macworld's buying advice

Adobe needs to decide if ImageReady is going to continue as a stand-alone program, or if it's going to be swallowed-up by Photoshop. But even as it stands, the Photoshop/ ImageReady bundle packs an awful lot of graphics power. Photoshop's cleaner interface alone ensures this upgrade earns its keep. The improved text-handling and vector-drawing tools will also save plenty of time, while the Liquefy command provides new creative possibilities.

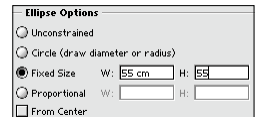
Version 5.5 may have been something of a mixed bag, but Photoshop 6.0 is an all-round success that will appeal to Web- and print-based designers alike.  
**Cliff Joseph**

### Text tools

Adobe has finally improved Photoshop's text tools, with character and paragraph formatting and a Warp option for distorting text.

### Export gallery

Photoshop 6.0's Web Gallery feature automatically generates HTML pages containing thumbnail previews of multiple images.



### Vector in

New vector tools allow you to quickly create and combine shapes, such as circles and rectangles, or to create complex custom-shapes.



Apple CEO biography

## The Second Coming of Steve Jobs

**Publisher:** Broadway Books  
**Distributor:** No UK publishing plans at time of going to press, but available from Amazon.  
[www.amazon.co.uk](http://www.amazon.co.uk)

**Pros:** Entertaining read; most interesting on beginnings of Pixar; new insights into mind of Apple co-founder and current CEO.

**Cons:** At times intrusive and arrogant; no pictures.

**Price:** £15.90

**Star Rating:** ★★☆☆6.8



**"It's not that Steve Jobs understands the mass zeitgeist: he is it. He has an endless supply of rebirths"**

In 1985 Steve Jobs was fired from Apple, the company he co-founded, because he was "a control freak, egomaniac, and fearsome tyrant". In 1997 he returned, and rescued Apple from almost certain death. He saved Apple by being a control freak, egomaniac, and fearsome tyrant. Welcome to the fascinating enigma that is Steve Jobs.

Alan Deutschman's *The Second Coming of Steve Jobs* sets out to solve this enigma – "to discover the deep sources of his character and motivation; what makes him exceptional as well as what makes him real ... Where he got his unusual ideas about leadership, management and the creative process... How he had been changed by his years of wealth and celebrity and by his years of struggle and failure."

Deutschman, who talked to nearly 100 people who have known and worked for Jobs, believes that his subject "succeeded in becoming the Jackie Kennedy Onassis of business and technology – ubiquitous as a symbol of his times, but little known as a human being". Steve is "a pop-culture icon, media hero, role model, sex symbol, and teen heartthrob" – quite different to most nerdy computer types, and hence the intense interest in the Silicon Valley legend.

### Away from Apple

*The Second Coming* starts in 1985, when Steve was exiled from Apple, and goes through to early this year, when he officially became Apple's chief executive.

According to his "closest friends" – although really close friends don't spill the beans to unauthorized biographers – post-Apple, Steve had thought of asking NASA if he could fly on a space shuttle. He would have ended up on the ill-fated *Challenger*. He thought about living in Soviet Russia, or maybe running for Senate. Clearly, Steve was at an end so lenient that he could have drifted as far from reality as the Newton's handwriting-recognition. Some of his pals even feared that he'd kill himself. Deutschman sums up Jobs' "lost weekend" thus: "He suffered a midlife crisis at 30, and compressed it into three months – an over-achiever even at personal trauma".

The rest of the book looks at Steve's NeXT venture, his role in the unbri dled success of Pixar – his "hobby" that made the blockbusters, *Toy Story* and *A Bug's Life* – and his eventual return to Apple. In the chapter 'Crises', NeXT, Steve's forlorn attempt to beat Apple at its own game, becomes a "horrendous flop". Even Pixar – which later became the source of Jobs' salvation – is a "miserable mess".

Steve's eventual return to Apple was a turning point. But despite his desire for revenge on the company that booted him out – "we're going to kick their ass," he told NeXT employees – Steve had apparently secretly yearned for a return to Apple as far back as 1987.

It's well known that Jobs has a legendary temper ("his penchant for turning on his colleagues with a wicked tongue"), and also that he is the most charismatic man in the whole computer industry ("He is seductive to the nth degree," says a former employee). Deutschman calls these opposing sides of Jobs' personality "Bad Steve" and "Good Steve". Many people working for Steve – whether at Apple, NeXT or Pixar – would ride his "hero-shithead roller coaster", where one day Steve would say you're great, and the next you "sucked".

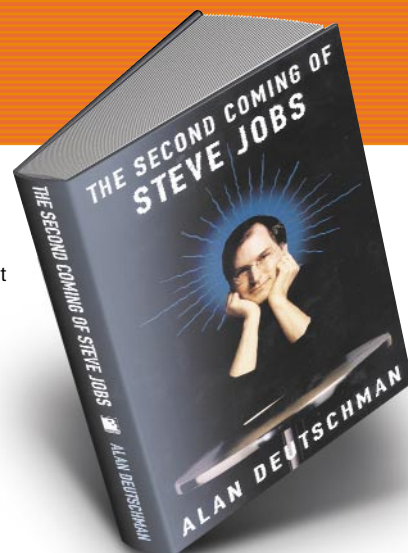
As Deutschman points out, muck sticks longer than honey – and Steve's reputation soon became more enfant terrible than admirable wunderkind. *The Second Coming* is full of stories of Steve screaming at those employees he thinks aren't aiming at the same level of perfection as he is. Some are funny, but the overall effect paints a rather grim picture.

One great story that I hadn't heard before relates to Steve's persistent phone calls to senior Apple figures shortly after his return. Developer relations manager Heidi Roizen is so unnerved by Steve's calls that she ignores them. She advises Apple board member – and all-round tough-guy – Bill Campbell to do the same. Campbell replies: "I tried that. But then Steve would come over to my house." "Don't answer the door," says Roizen. "I tried that," says Campbell, "but my dog sees him and goes berserk".

Deutschman suggests that Jobs could have learnt his domineering management "skills" from a weird-thinking guru called Werner Erhard, who locked his pupils in a windowless hotel-ballroom and subjected them to intense verbal abuse, "saying they were all 'assholes' and making them cry and shake hysterically".

On the other side of the scale, a *Newsweek* reporter tells how she watched the first Think Different TV ad with Steve, who cried at its powerful imagery. "That's what I love about him," she says. "Steve was genuinely moved by that stupid ad."

*USA Today* reports that Jobs sees this book as a "hatchet job". It's not quite that – but, over the 300 pages, Deutschman commits many of the crimes that he accuses his subject of. The author



himself alternates suddenly between being charming about Jobs and being horrible. "Humiliating people isn't nice" is Deutschman's message. Yet he jokes that, by the age of 44, Steve has "a bit of a tummy... and a small bald spot". So?

And he tries to show-up Steve for quite ordinary wishes: having a nice home, being vegetarian, desiring success. In one paragraph, Deutschman seems to pour scorn on Jobs for "enjoying hobnobbing with celebrities, and attending glamorous events".

Is it a crime to enjoy such a lifestyle?

In the final chapter, "Being Steve", Deutschman lists ten theories about what makes up Steve's "mesmerizing, if frustrating, personality":

- 1: Steve acts like a child. 2: Steve changes his mind... a lot. 3: Steve is the product of a media culture. 4: Steve has to be an asshole to get things done. 5: Steve is stubborn. 6: Steve is emotionally insecure. 7: Steve rides roughshod over personal commitments. 8: Only young people have the resilience to work with Steve. 9: When Silicon Valley is hot, so is Steve. 10: Steve is an enigma.

### Macworld's buying advice

And, after reading *The Second Coming*, Steve Jobs remains an enigma because, for all his second-hand anecdotes and gossip research, Deutschman doesn't crack the code. This unauthorized biography is an entertaining read, but don't expect to understand the man any better than you did beforehand.

For all his flaws, Steve Jobs is good news for Apple. His vision made the Mac a reality, and his input keeps it real today. If he has to shout at people who underperform, fine. Good Steve means a lot more than Bad Steve. If his personality at times seems crazed, maybe that's because, to Macintosh users everywhere, Steve Jobs is as "insanely great" as the iMac or *Toy Story* 2.

**Simon Jary**, control freak, egomaniac, and fearsome tyrant.





Budget portable digital assistant

## Palm m100

**Publisher:** Palm (020 7365 9820) [www.palm.com](http://www.palm.com)

**Pros:** Comfortable design; inexpensive; Mac desktop software is included.

**Cons:** Small screen; Expense and Mail programs omitted.

**Minimum specs:** Mac System 7.5.3 or later.

**Price:** £129 including VAT

**Star Rating:** ★★★★★/8.7

The entry-level, £129 Palm m100 handheld organizer might suggest that Palm has cut corners to be able to match the price of the Handspring Visor. But the m100 proves to be a better device than even the most ardent techno-elitist would like to admit – especially for users who are new to the world of handheld computing.

The m100's appearance makes it easy to pick this handheld out of the Palm line-up. Slightly taller and wider than the Palm V and with a curved shell, the slate-coloured m100 is lightweight and comfortable. For £22, you can add a removable faceplate in one of five bright colours – including blue, silver, red, green and black. It includes a HotSync cable instead of an upright cradle, reducing desktop clutter and enhancing portability – however, you'll still need to purchase a USB or serial adaptor to connect it to your Mac.

If you've ever used a handheld, you'll notice Palm's main concession to price: compare the slightly smaller than 2-x-2-inch plastic screen with other Palms' 2¼-x-2¼-inch glass screens. Even so, the display is crisp – the resolution is the same as in previous models – and also workable. The plastic cover flips up and over the top of the device to rest flat against its back, not perched halfway like a car bonnet. And the built-in speaker is significantly louder than those in previous models, so you can actually hear the alarms you set.

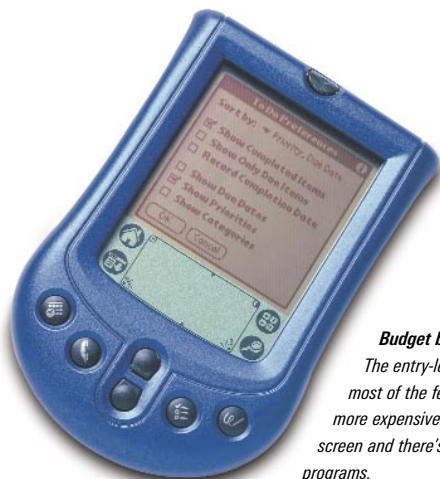
The m100 includes only 2MB of memory and can't be upgraded – meaning it won't work with systems beyond Palm OS 3.5.1. However, that's plenty of memory for basic functions, and expandability isn't an essential consideration for the m100's target audience.

Functionally, the m100 works like every other Palm OS-based device, with a few notable exceptions. The Note Pad application allows you to write or draw on the screen as if it were a Post-it note and then synchronize to a similar, included, Note Pad application on your Mac. The omission of the Expense and Mail programs is vexing, but the Macintosh Palm Desktop software is included – something Palm should have been doing all along.

### Macworld's buying advice

The m100 may be a consumer-level device, but it boasts most of the professional features that have made Palm OS the dominant handheld operating system. If you've considered purchasing a Palm organizer for your favourite Mac novice, the m100 is the best choice.

**Jeff Carlson**



#### **Budget bargain**

*The entry-level Palm m100 includes most of the features of the company's more expensive PDAs, but it has a smaller screen and there's no Email or Expense programs.*



Video-compression stalwart

## Terran Cleaner 5

Publisher: Media 100 [www.media100.com](http://www.media100.com) [www.terran.com](http://www.terran.com)

Distributor: Computers Unlimited (020 8358 5857)

Pros: Wide range of compression options; optimized for streaming media; comprehensive EventStream support.

Cons: No audio-capture capability.

Minimum specs: PowerPC; Mac OS 8.6 or later; QuickTime 4.1.2.

Price: £349 excluding VAT

Star Rating: ★★★★★/8.4

Formerly known as Media Cleaner Pro, the latest version from Terran is just called Cleaner 5. Billed as “the camera-to-Web video solution”, it aims to move beyond being an indispensable video-compression utility and becoming a complete video-preparation tool.

Cleaner involves a five-point plan: capture, author, encode, publish, and workflow – all adding functionality around the core encoding-feature from version 4. A number of interface enhancements complete this version.

The Capture facility comes from the complete integration of another product – Digital Origin MotoDV. Media 100, having bought both Terran and Digital Origin, has married the two products, so that you can select Capture From DV from the File menu of Cleaner. This allows you to pull-in video files direct from a DV camcorder through a FireWire connector. The files are then fed directly to Cleaner's Batch window, where clips are queued, ready for processing. Cleaner also supports the import of both MPEG 1 and 2 files, and there's no longer a 2GB file limit, meaning Cleaner can work with long segments of uncompressed footage.

Authoring is not the first thing that springs to mind when considering video, but it's one of the most exciting features of Cleaner 5. It allows you to add EventStreams to video files in order to add interactivity to movie files. These include embedded Web links, clickable hot-spots and synchronizing video with an HTML page or a Flash movie. Cleaner works with the EventStream implementation within QuickTime, RealSystem, and Windows Media, and will automatically adjust for the varying level of functionality in all three.

Marking EventStreams is simplicity itself: simply use the Move controller in the Project window to the desired point in the movie, and then click Add in the EventStream window. You can also add EventStreams in real time as the movie plays. Once the EventStream points have been determined, the event type



### Final destination

Cleaner 5's new interface is, er... cleaner. The Project window makes it easy to see the current settings and monitor bit-rates.

and related properties can be assigned.

The Encoding functionality has been improved from Version 4, with many more options for outputting as streaming video. Formats include QuickTime (now with MP3 support), RealSystem 8 – including two-pass variable bit-rate (VBR) – Windows Media, MP3, MPEG-1, and MPEG-2. This makes Cleaner a viable tool for compressing video for DVD. Cleaner 5 not only claims to process faster, but also supports dual-processor Macs for increased speed benefits.

The beauty of Cleaner 5's approach is that, from the same source clip, you can encode compressed files at different sizes, bit-rates and formats. You can choose from a lots pre-defined settings, and it's also easy to customize them.

Cleaner comes with a wide range of Codecs – the algorithms for handling the compression and decompression of audio and video files – but it will also work with many others that are on the market for more specialized applications. Terran's CodecCentral Web site lists available codecs ([www.codeccentral.com](http://www.codeccentral.com)).

It's easy to regard Cleaner 5 as purely a video tool, but it's also a capable audio-compression utility, and will work with a number of audio formats, and encode MP3 files with a variety of compression algorithms. However, it's a shame that there are no features to capture audio directly to the application, or a CD audio-extraction capability.

Publish is the next step of the process, and is a major improvement on Cleaner 4, which lacked control over where it saved movies. Now you can specify default folders to export files, or specify the location for individual files in the batch window. Cleaner also has a rudimentary FTP server built-in, so that encoded files are uploaded directly to

the server, but I can't imagine many users would want to automatically upload video without checking it first.

The MetaData panel in the setting window embeds details of the creator, date, and, crucially, copyright, into the video file itself – especially important when distributing video files online. While you can apply a watermark to a video clip, there's no in-built support in Cleaner for any advanced invisible video-watermarking software, such as Alphatec VideoMark. This needs to be added afterwards.

Workflow features are meant for power-users processing many clips, and Cleaner is also ideal for repetitive tasks. Not only can you save settings, but now can also apply modifiers to a setting without having to change the base parameters. For instance, if you have a setting for exporting a piece of video for CD, but want to adjust the fade-in time for a number of clips, there's no need to create new settings for each.

Finally, Cleaner 5 allows In and Out times for a clip to be specified, so there's no need to crop a movie in Premiere before encoding it.

### Macworld's buying advice

While Cleaner is a comprehensive video-output tool, one thing it isn't is a video-editing tool. It can't sequence multiple-video tracks – for this you'll need a dedicated video-editing and effects tool, such as Adobe Premiere or Apple's Final Cut Pro. This is why the claim that it's the complete “camera-to-Web” solution is dubious, unless you're in the habit of uploading unedited footage for the world to see. Still, Cleaner 5 is a welcome upgrade – and essential if you specialize in streaming media.

**Martin Gittins**

### Wizard set-up

You can use the wizards to determine automatically the settings for output, or specify them manually, once you know what you're doing.

Output	QuickTime (.mov), Flash/FlashPlayer, RealPlayer, Windows Media, etc.
Tracks	Process video, Process audio, Process MPEG
Image	Manual crop, Image size 1440x1080 (display doubled), Fast scaling, Noise reduce
Adjust	
Encode	Sorenson, H.264, 400 kbps, 15 fps, Keyframe every 150, 2400 kbps/s video
Sorenson	Highest Quality (normal speed), Smoothing
Audio	QuickTime, 48 kbps, 16-bit mono, Sample at 22,050 Hz
Begin/End	
Alternate	56k modem, quality 5, QuickTime 5
Metadata	software: Encoded with Cleaner 5
Use Wizard...	Alternates Apply





## Photo-quality printer

**UP-DP10****Manufacturer:** Sony (01932 816 660)**Pros:** Prints look just like photographs.**Cons:** Limited usefulness.**Min specs:** USB**Price:** £249 including VAT**Star Rating:** ★★★★★/7.5

**S**ony has a new kind of printer that relies on old technology. The printer carries the ungainly name of the UP-DP10, and it uses dye-sublimation to make photographic-quality prints. It does this very well, but it is a one-trick pony.

We've been told for some time that digital cameras are going to take over from analogue film. This is undoubtedly true, though whether it's this year or in 50 years depends on what kind of photography you're talking about. For most people, photography is what you do on holiday or at parties with a cheap or, even, throwaway camera. Matching that kind of quality with a digital camera is child's play, but matching the look-and-feel of those images is less simple.

The UP-DP10 – let's call it the Sony

printer – can print on special glossy paper that's available in 6-x-4-inch or 5.275-x-4-inch formats. For the metrically minded, that translates to 152-x-100mm, or 134-x-100mm. These are fairly standard photo sizes.

A pack of 25 sheets of either size of paper, plus the dye-sublimation rolls to print on, costs £10 including VAT. This works out at 40p per print – still more expensive than the film option, but not too pricey. Dye-sublimation allows you to predict the number of prints you'll get from a roll, unlike with ink-jets.

The software supplied looked dreadful at first. The disc isn't well thought out, and the good software is easy to miss. PhotoPrinter 2000 from Arcsoft is, for example, fantastic, and makes printing single pictures or sheets of mini pictures easy. But the Arcsoft PhotoStudio that's also provided is horrible, with a nasty interface and flaky performance.

The quality of the printer equals the best ink-jets, but the output is limited to snap-size. When compared to an Epson Stylus Photo 1270, which can print the same quality at up to A3 size, this printer falls short. The Epson printers also have an optional roll for printing photo-style pictures, though you must cut them from the roll yourself. The Sony does



win on simplicity though, and for being predictable on costs. But, the Epson Stylus Photo range is more flexible. And the smaller A4 model is £60 cheaper than the Sony printer.

**Home studio**

*The Sony UP-DP10 is a photo lab for your desktop, offering great image-quality and photo-sized prints.*

**Macworld's buying advice**

The UP-DP10's image quality is excellent. If that's all you want, then this is the best way of achieving it. If, however, you want more flexible paper sizes then there are cheaper options. Yet with the high price of consumables, the initial price of the printer is not necessarily the most important thing. The Sony printer may be a one-trick pony, but if you only need one trick, it's ideal.

**David Fanning**



## Network ink-jet printer

**Business InkJet 2250tn****Manufacturer:** Hewlett-Packard (08705 474 747)  
www.hp.com**Pros:** Cheap; network-ready; PostScript-equipped.**Cons:** Network laser printers are faster.**Min specs:** Ethernet**Price:** £789 excluding VAT**Star Rating:** ★★★★★/8.3

**H**ewlett-Packard is one of the leaders in both ink-jet and colour-laser printing, and each method has its merits. The problem is that there is a gap between the functionality and price of the two. HP has remedied this with a range of ink-jet printers offering laser-type features. We looked at the network-ready version – the Business InkJet 2250tn.

The 2250tn looks like an over-sized ink-jet printer. There's a reason for this: it houses both ethernet and memory – absent from most ink-jets, which usually rely on the Mac's processor to control the printer. The 2250tn has 24MB RAM, which helps process the images.

It also sports a Level-2 PostScript processor that enables printing directly from QuarkXPress or Adobe Illustrator, something at which most ink-jets fail miserably. Lack of PostScript normally means that vector-graphics applications don't print properly on cheaper ink-jets.

The price is definitely ink-jet. Even at £789, it's at least half the price of a colour laser, which also requires more maintenance than ink-jets. Toner can be messy, and other consumables, such as fuser oil and drums, can make keeping a colour laser-printer working a full-time job. The 2250tn has more consumables than a normal ink-jet, but nothing too confusing.

Its ink cartridges are huge. If the smaller printers could use this size, it would save a lot of money. It would also cut down the panic dashes to Computer World when you run out of ink half-way through a big job.

The printheads are separate from the ink cartridges, meaning their life is extended. This, however, doubles the number of consumables needed. This isn't as bad as with colour lasers, but is more complicated than a home ink-jet.

Speed is a big issue when it comes to office printing. But unfortunately, this printer's speed is not easily measured.

Because ink-jet printers take longer to print pages with more coverage, times per-page vary wildly, depending on the image. Laser printers print at engine speed, so once the image is processed, pages will spit out at a predictable rate.

HP claims 15 pages per minute is possible, and indeed, the 2250tn is more than capable of this. As long, of course, as the image is small.

In its fastest, lowest-quality mode, the 2250tn can quickly print clear and useable pages. Ten newsletter-style colour pages took just under five minutes to print – nowhere near the claimed speed, but reasonable enough.

**Macworld's buying advice**

In a small office, this printer fits neatly into the market between standard ink-jet and colour-laser. It isn't as fast as a colour laser, but it's capable of similar quality on the right paper. It's faster than a normal ink-jet, and it has more paper capacity. In the right environment, the 2250tn offers a cheap colour-solution for jobs that traditionally would be printed on a mono laser-printer.

**David Fanning**

**Bridging the gap**

*The Business InkJet 2250tn is neither fish nor fowl: it's a halfway-house between ink-jet and laser technologies.*

**Portable-network solution****NetStation****Publisher:** Xircom (01256 332 552)**Pros:** Looks cool; keeps things tidy.**Cons:** Pricey.**Min specs:** Ethernet.**Price:** Four-port version, £328; Eight-port version, £524.**Star Rating:** ★★★★★/8.3

Imagine you have a crack team of salespeople, all on the road selling their hearts out. At the Monday morning meeting everybody sits in the boardroom behind their PowerBooks, strategizing, touching each other's bases and running things up each other's flagpoles. But wait, with all this networking, where is your network?

Unless you have a higgledy-piggledy mess of spaghetti connecting each Mac to the network, you probably have nothing at all. Now Xircom has a solution designed specifically for the boardroom: the NetStation.

At first glance, the NetStation is just a regular hub – niftily designed but otherwise normal. However, the connections are spring-loaded cables that can be grabbed and plugged into your machine. Cool.

The NetStation can be installed in the middle of a boardroom table, with discreet power and network connection coming from a single wire. It can sit there like a silver turtle, neat and tidy when it not being used. Then, at the drop of a hat, it springs into life as a four- or eight-port hub. This is extremely convenient and impressively implemented. If the laptops are Macs it's a simple matter to make a

pre-set configuration to take advantage of any network goodies, such as printing or Internet access. Even if there are PC notebooks, they can still be plugged in without too much hassle.

**Macworld's buying advice**

If you have an impressive boardroom table, the NetStation will only add to the kudos. It's as functional as it's beautiful, especially if you compare it with the alternative – a mini-hub with miles of cables littering the office. Of course, the price reflects its high-flying profile, but you don't want to look like a cheapskate in the boardroom, do you?

**David Fanning****Network to go**

*Xircom's NetStation not only looks cool, but its retractable leads allow for neat, cross-platform networking – anywhere.*

**Portable USB-hub****Pocket Hub****Publisher:** Belkin (01604 678 300)**Pros:** Small and neat.**Cons:** No Key-Lime colour.**Min specs:** USB.**Price:** £40 including VAT**Star Rating:** ★★★★★/8.0

The advent of USB was supposed to cut down on the number of heavy cables needed to connect peripherals. In fact, my desk has become more cluttered due to a seven-port USB hub – every port is used. Even people on

the move are likely to have enough devices to overload the two USB connections on a PowerBook or iBook. Belkin now has the perfect solution – the Pocket Hub.

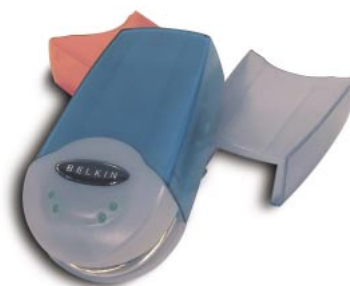
First of all, the Pocket Hub is actually pocket-sized, unlike so many devices that have pocket in their names. It is a little bigger than a mouse, and the design hides the cable until it's in use. It has four ports and comes with a choice of three translucent covers – all the colours of the iBooks except Key Lime.

It works fine with external mice, keyboards and non-powered devices. If you use something that takes power from the USB bus, you'll need to use the provided power supply. Unfortunately,

the power supply is bigger than the hub itself, and to make things worse, the wires are tricky to wrap up – making the power supply an inelegant partner to a beautifully designed hub. It isn't really the fault of Belkin: the UK power-plug must be the biggest and ugliest in Europe. It's just a shame that there isn't a better solution to the problem.

**Macworld's buying advice**

If you need a USB hub while travelling, there's no better answer – though the ugly, but optional, power supply spoils it a bit. But if you can get away with an non-powered hub, it is just the ticket.

**David Fanning****Portable peripherals**

*The Pocket Hub is small and portable, but where do you put the USB peripherals?*

**War-&-no-peace game****Beach Head 2000****Publisher:** MacSoft [www.wizworks.com/macsoft](http://www.wizworks.com/macsoft)**Distributor:** Softline (01372 726 333)**Pros:** Addictive.**Cons:** Bloody warfare; lifespan.**Min specs:** G3 or higher;

Mac OS 8.1 or higher.

**Price:** £25 including VAT**Star Rating:** ★★★★★/5.6

Blam, blam, blam! Ack-ack-ack-ack-ack – arrgghh! Boom, boom, boom – ieee! That, in a nutshell, is Beach Head 2000 – a gun-toting, plotless-Saving-Private-Ryan affair that sees you as a lone turret-gunner fending off hordes of enemy troops with streams of hot lead and a show-no-mercy attitude.

Armed to the teeth with a 30mm

dual-barrel gun, 76mm antitank gun for taking out troop transports, ground-to-air missiles, artillery barrages and – if you're really desperate – a .45 hand gun for up-close-and-personal warfare. You sit in a protective bunker, and can pan around at the centre of a 360-degree landscape.

Enemy troops pull up to the beach in landing barges, then advance over the sand in a bid to introduce you to their bayonets. Barges can also land tanks and armoured personnel carriers onto the beach. Overhead, a swarm of fighter jets, troop-landing helicopters, gunships and heavy bombers fill the sky with falling death as you vainly attempt to hold off the onslaught.

Beach Head 2000 is at once the game to end all games and a muddy no-man's game that no one would want to cross. The graphics are functional, with soldiers keeling over

spurring blood as an anti-tank round rakes through them. Fire a missile at a crowd of troops, and watch as their limp bodies are flung in all directions.

The audio does offer satisfying machine-gun clatter and the air is filled with realistic screams of marines and exploding whumps of downed aircraft.

**Macworld's buying advice**

This is no in-depth game – later levels just see more troops and material attacking your position, and more yet frantic action. It's oddly addictive, but longevity – much like the lifespan of the troops you get to mow down – is alarmingly short.

**Colonel Matthew "Order of the" Bath****Life's a bloody beach**

*As GIs try to sneak up on your bunker, you can rotate your gun turret through 360 degrees, killing all in your path.*





## Web design tools

### Herald

**Publisher:** Voss Net  
www.vossnet.com

**Distributor:** Comet; Staples; Rymans and other leading high-street stores.

**Pros:** No scary Web-design software.

**Cons:** Expensive; restrictive.

**Min specs:** Web access.

**Price:** £38 initial fee, then £15

per month, excluding VAT.

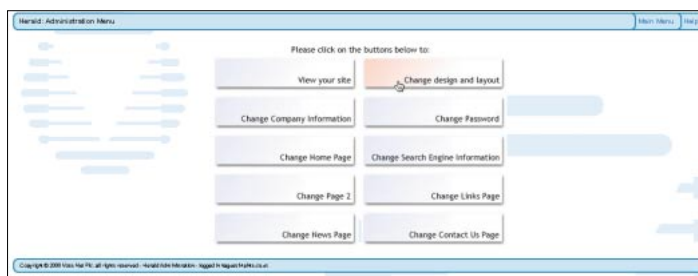
**Star Rating:** ★★/3.0

Voss Net has released a new kind of Web-design product. Actually, it's not a physical product at all, even if it does come in a box. It'll be available in high-street shops, such as Dixons and Comet, and it's called Herald. It claims to be a complete Web-site solution in a box, but when you open it, there's just a small manual and an access code.

I'm often disappointed by the contents of big boxes; once the packaging is gone, there's often just a CD with no manuals. But no CD – that's a new angle. To start a Web site with Herald, you must log into the easy set-up section of the VossNet Web site. Not too hard for anyone with any Web experience, but absolute beginners could find this daunting. Next, type in the key-code to gain access. Then, after filling in name and address details, you can search for a .co.uk Web address. The cost of the domain name is included in the price of £38, though you can register an address such as this for £5, or even less from other sites.

Once you've chosen the address, you need to select from a template. There are 80 templates, with names such as Unified Marshmallow, Out of Body Rose and Henge Ellipse Cream. This says more about the – altered – state of mind of the designers than the designs. I settled on Ethereal Sepia.

Most of the templates are simply



### Site design

*Herald is as easy as painting by numbers, but the results are similar. Putting your business online with Herald is similar to getting your business cards printed from a machine at a service station.*

alternative colour schemes of the same design. The layout varies only slightly; all have five pages called Home Page, Products, News, Links, and Contact Us. If you can't fit your Web site into this format, then forget it. The buttons are preset, and there's no way to change them.

The first page is set-out to include a photograph and a couple of paragraphs of text. The second page is for Products, and also allows one image. Page three is set aside for news pieces; there isn't an obvious limit to the amount of stories posted, but no pictures are possible. The fourth page is for links to other Web sites, and nothing else.

The last page is for contacting your organization, and it includes a form for brochure or sample requests. This does have a nifty map feature that takes your

postcode and draws a map of the area. Unfortunately *Macworld's* postcode was "not valid", so it didn't work for us.

### Macworld's buying advice

If I'd bought this from a computer superstore, I'd be sorely disappointed. This "password in a box" is little other than a marketing ploy. It will almost certainly fool most punters into thinking they've bought a Web site, even though the £15 per month fee – which is an outrage – is written on the box. A search of the Web shows there are many other hosting-options at a fraction of the cost.

Use iTools, which is free, and one of the many domain-registration companies. You may have to have an ad banner, but it's still better than a Herald site.

**David Fanning**



## World images and maps

### Earth Images Collection

**Publisher:** Planetary Visions  
www.planetaryvisions.com

**Distributor:** RH Publications  
(01840 212 135)

**Pros:** Browser-based user interface; fantastic set of images; two sizes for multimedia and high-resolution uses.

**Cons:** Pricey; JPEG compression causes some artefacts.

**Min specs:** Web browser; image editor.

**Price:** £300 excluding VAT

**Star Rating:** ★★★★★/7.5

You don't have to be involved in astronomy to make use of a set of Earth views. They're a nice addition to a Web site or multimedia project, and can also be used as the basis for some creative compositing.

The Earth Images Collection is a single CD-ROM with over 1,200 such images. These are derived from British-based Planetary Vision's natural colour Satellite Imagemap – more than 30GB of data from three

satellite systems were combined with digital-map and -terrain data to produce this 1km-wide map. With the whole package being encapsulated in a standard-browser interface, it's a doddle to find your way around. This also means not having to navigate your way through lots of folders on the CD – once a particular image is found, the browser's "save to disk" function can be used.

### Cloud haze

Each of the 144 views has four styles. The standard cloud-free variety has been enhanced via a custom ray-tracing program to simulate the normal atmospheric haze, while the cloudy version shows our natural planet through data derived from geostationary weather-satellites.

Ocean-depth images have a natural land surface combined with a colour-coded ocean-depth map, and there's also a set of night-time images, courtesy of the

US Air Force DMSP (Defense Meteorological Satellite Program) weather satellite.

Aside from the main images, the package offers views showing each continent by day and night, plus nine stretched-out world maps.

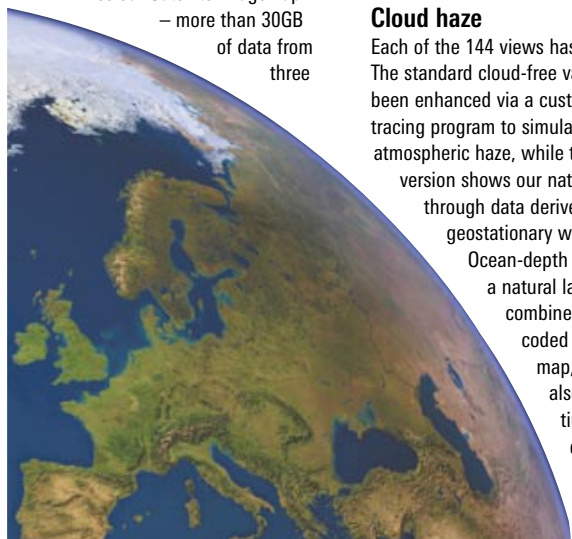
To allow for the disparate uses of multimedia and high-resolution image work, each map is presented in two widths: 600 pixels and 1,920 pixels, the latter allowing for full-width A4 printing at 240dpi.

### Macworld's buying advice

If there's a criticism, it would be in the high-level of JPEG compression – the artefacts can be seen quite clearly on some maps in the division between land and sea, leading to a slight lack of definition on printing. With 200MB to spare on the CD, a lower compression ratio should have been possible.

That said, Earth Images Collection is a substantial set of world images, and will satisfy anyone in need of global views.

**Vic Lennard**



*This is Planet Earth*  
Aside from the standard views, Earth Images Collection includes a set of continent-based pictures.



MP3s on the move

## HipZip

**Publisher:** Iomega  
(0800 973 194)  
[www.iomega.com/europe](http://www.iomega.com/europe)  
**Distributor:** High Street stores  
**Pros:** Small; shockproof.  
**Cons:** Expensive; small-capacity; expensive media.  
**Min specs:** USB  
**Price:** £289 including VAT  
**Star Rating:** ★★/4.8

People across the world download MP3 files to play on their computers, and, increasingly, on portable players. Iomega has decided it's time to get in on the action by launching the HipZip – a portable MP3-player that uses tiny floppy discs to hold the music.

The disks are known as Klik discs, but Iomega has relaunched the Klik format as Pocket Zip. The HipZip is a last-ditch attempt to save Klik, but one I fear is doomed to failure. This is because it fails to meet the minimum requirements for a useful MP3 player. Iomega claims that this is a cheap way to listen to music, and that you can get 70 minutes of music on one disk. The 70-minutes claim is only partially true. An MP3 file can be compressed to different levels, rather like a JPEG file. If a file isn't compressed too much, a near-CD quality sound is possible, but it needs about 1MB per minute. However, if you're happy with AM-radio quality you can cram 70 minutes of music on to a Pocket Zip disk. But, at a decent sound-quality, you can store only 40 minutes.

The other claim of cheap storage is also misleading. If Pocket Zip is compared to solid-state memory cards it's cheap, at

£8 per disk. To get the same capacity would cost a fortune using a CompactFlash card, for example. However, the Pocket Zip is more akin to a MiniDisc, which is much cheaper.

MiniDisc is capable of recording from CD with MP3 compression, or recording from just about any audio source – including MP3s copied from a Mac. You get 74 minutes of audio per disc, and a disc can cost as little as £1 if you shop around. Not only does MiniDisc have almost double the capacity, you can get players that are smaller than the HipZip. Also, the players cost from £150-£250, whereas the HipZip weighs in at £289 – although in the US you can buy one for just \$299.

MP3 players need to fulfil a few basic requirements before being a good idea. They need to be smaller – or at least as small – and cheaper than the competition. They also need to be more convenient than the competition. The HipZip fails to meet the first two requirements, and the convenience issue is debatable. If you already have a big collection of MP3-formatted music, it's convenient to transfer the files to the HipZip. If not, converting your CDs to MP3 format is a time-consuming pain in the rump.



### Macworld's buying advice

If the HipZip was £89 instead of £289 it would be a different story, as the little complaints would be acceptable. Unfortunately, the HipZip's price is so high that problems, however small, are extremely annoying. The fact that you can buy the HipZip in the US at two thirds of the price, will not endear Iomega to potential buyers. If you really want portable music, there are much better, cheaper and smaller options.

**David "don't get me started" Fanning**



Tolkien-esque game

## Baldur's Gate

**Publisher:** Graphsim  
[www.graphsim.com](http://www.graphsim.com)  
**Distributor:** Softline  
(01372 726 333)  
**Pros:** Complex rules; in-depth story; great graphics.  
**Cons:** Very slow on original iMacs; real-time interaction not handled well.  
**Min specs:** 200MHz Power Mac; Mac OS 8.1; 64MB RAM; 380MB hard-disk space.  
**Price:** £45 including VAT  
**Star Rating:** ★★★/7.2

It must be a weird experience being a computer character in the role-playing game (RPG) Baldur's Gate. Not only do you have to deal with a dark army of foul goblins, but your every movement is achingly slow as your pixellated legs ponderously wade through the landscape.

But that, unfortunately, is what Baldur's Gate is like – and it sadly detracts from what could well be a real romp of an adventure. At first glance, Baldur's Gate is an RPG enthusiast's Holy Grail. Based on the popular Forgotten Realms campaign – previously played around a table using a 100-sided die and armoury of pencils – it boasts the tapestry of a Dungeons-&Dragons world.

Not only that, but it comes on a whopping five CDs, includes over 10,000 scrolling game-screens, and has dozens of subplots that are woven tighter than a chainmail jockstrap. Stir in 60 monster types, more than 100 spells, equipment selections that actually change how your characters appear on screen, and hundreds of builds to explore, and this should have been a great adventure.

And to some extent, this is a ripping yarn in true Tolkien-esque fashion. You start out by creating your own character, such as Paladin, Ranger or Fighter, and set attributes, such as how proficient they



### Baldur dash

*The thought that's been put into Baldur's Gate can't be faulted, but unfortunately, the slowness of the graphics seriously hinders this role-playing game.*

are at stealing. As you wander around the, admittedly, detailed land, you'll gradually build up a party of do-gooders eager to go-a-dragon-slaying.

The interface is suitably Olde World, and you can drag-&-drop weapons and items into inventory slots, or gain quick access to spells. The background graphics are stunning: crisp buildings, cracking lighting effects, transparency and shadows, realistic movement and impressively varied scenery make for a believable world.

Yet sadly, Baldur's Gate is a little blunted. As the characters amble into yet

another slow-motion battle with equally tired-looking vampires, you can't help feeling they'd rather be darning socks than dicing with death. Add in the fact that this is essentially a turn-based game that has been clumsily mapped into real-time, and you have a game that you'll need to work at to enjoy.

### Macworld's buying advice

That said, there's a rich, emotive and downright massive game lurking inside Baldur's Gate – the task you have is to find it.

**Matthew Bath**



Epson Stylus Color ink-jets

## Stylus Color 680

**Publisher:** Epson (0800 220 546)  
[www.epson.co.uk](http://www.epson.co.uk)  
**Pros:** Fantastic glossy prints; fast and useable draft prints; incredibly cheap.  
**Cons:** No matter how cheap the printers get, the ink is still expensive.  
**Min specs:** USB  
**Price:** £119 including VAT  
**Star Rating:** ★★★★★/9.1

## Stylus Color 880

**Publisher:** Epson (0800 220 546)  
[www.epson.co.uk](http://www.epson.co.uk)  
**Pros:** Fantastic glossy prints; fast yet useable draft prints; reasonable mid-range prints.  
**Cons:** £40 more than the 680.  
**Min specs:** USB  
**Price:** £159 including VAT  
**Star Rating:** ★★★★/8.7

## Stylus Color 980

**Publisher:** Epson (0800 220 546)  
[www.epson.co.uk](http://www.epson.co.uk)  
**Pros:** The fastest ink-jet printer in the range; realistic colour on glossy prints.  
**Cons:** More than double the price of 680.  
**Min specs:** USB  
**Price:** £304 including VAT  
**Star Rating:** ★★★★/7.5

Not long ago, Epson released its premier photo-printers, the Stylus Photo 870 and 1270. Epson has now updated its non-photo ink-jets, but the quality is so good it's hard to tell the difference between ranges.

The cheapest model in the new range, the Stylus Color 680, offers amazing value for money. At £119, it does a great job of printing – even on rough photocopier paper. With glossy paper, it can print photographs that are indistinguishable from the real thing. In theory it outputs lower quality than the Stylus Photo 870, but the difference is negligible – and the 680 is



almost half the price of the 870. Previous Epson models printed text pages in draft mode extremely quickly, but the quality was almost unusable. Epson's competitor, Hewlett-Packard, designs its printers to print high-quality drafts – making for a better all-round printer. Epson has now realized this – as Draft mode is now almost as good as Best mode for text, but without any speed penalties.

Photographic images have more noticeable quality problems in Draft mode. This is one area where you can compare the output of all three printers and see a difference. The 680 is grainy, but still good enough to get the message across. The 880 and 980 are better at low- and medium-quality photos.

The 680 is quiet compared to older models, but it's louder than the 880 and the 870. Fortunately, you don't need to listen to it print for long – these printers are extremely quick. Even an image that takes up most of an A4 page can be printed on the 680, in Fast mode, in a little over 30 seconds. Text is even faster. I don't know what Epson has done, but these babies fly.

The resolution of ink-jet printers is an often-quoted, and increasingly irrelevant, measure of quality. The latest Hewlett-Packard printer is capable of 2,400dpi, yet with a default setting of just 600dpi – yet the difference between the output is negligible. Epson has traditionally led the way in high-resolution ink-jet technology, with most printers being capable of 1,440dpi. The new crop can print at 2,880dpi. This ultra-high resolution makes a mockery of the resolution race. If you were to print an original image that had this resolution, not only would it take forever, but the quality would be similar to a lower-res print. Consumer scanners don't tend to go much higher than 1,200dpi, so original 2,880dpi images are rare.

The model after the 680 sees a small jump in price to £159 for the 880. Epson seems to be hitting price targets rather than the needs of consumers as the difference between the 680 and the 880 is minor. Although the 880 looks different, and its mid-range print quality is better, in Best and Draft modes the differences are minimal. The 880 is quieter than the 680, but it's not worth the extra £40.

If the minor improvements of the 880 over the 680 are overpriced, then the 980 makes little sense. The 980 is touted as being the faster office printer. There are differences over the other two models, but the price is over £300 – more than twice



that of the 680. The features are improved, but not by that much. The main issue is speed. Epson claims it can print as many as 13 pages per minute (ppm) in mono and 12.5 ppm colour. Our tests proved this, though the more ink coverage there is on the page, the slower it will print.

Apart from the speed increase, the 980's best-quality photo prints on glossy paper have a more natural colour than the other two models. The 680 and 880 look excellent, but the colour saturation is slightly high. The 980 was more realistic, though that made the image less punchy than the others.

### Macworld's buying advice

Epson has inked itself into a corner with this range. The cheapest model is so close to the most expensive model that there's no great incentive to buy anything more than the 680. While this might not be what Epson wants to hear, it's great news for Joe Public. The 680 is without doubt the best-value-for-money printer the Macintosh market has ever seen.

The 880 is capable of better print quality in the mid-range than the 680. It's also quieter and slightly sturdier looking. The price difference of £40 is small enough for a persuasive sales person to convince me it's worth it.

If I had a small office and had to choose between one 980 or two 680s, I'd choose the 680s. The 980 is faster than the others and I liked the output on glossy paper, but it isn't twice as good.

**David Fanning**



### Pricing mayhem

*Epson's latest batch of printers, the Stylus Color 680 (above), 880 (below, left) and 980 (below), all have high-res and high-speed printing. However, the £119 680 is the pick-of-the-bunch. At over twice the price of the 680, the 980 doesn't have enough extra features to justify the cash.*





HTML and text editor

## BBEdit 6

**Publisher:** Barebones Software,  
www.barebones.com

**Distributor:** Mygate  
(020 8297 9699)

**Pros:** Fast; flexible; multi-function text handling; extensive search and replace.

**Cons:** Web editing requires good knowledge of HTML.

**Min specs:** PowerPC; System 7.5 or later.

**Price:** £99 including VAT

**Star Rating:** ★★★★★/8.6

A decent text-editor isn't the sexiest piece of software you'll ever install on your shimmering G4 Cube, but it may well be one of the most useful.

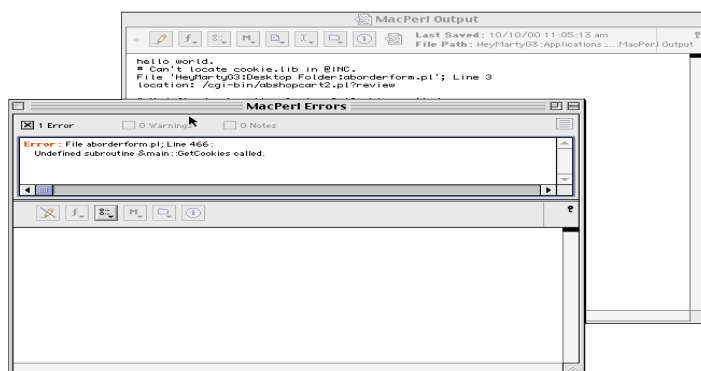
Leading the way on the Mac is BBEdit, a fast, funky and highly functional word cruncher that can satisfy just about any text-entry needs.

But what does BBEdit actually do, and what the heck have they added to warrant a whole new version?

OK, we know we can edit text files with BBEdit. In fact, you can edit a number of text files, and save them in Mac, DOS or Unix formats. With version 6, you can now edit text in any left-to-right script – assuming it's supported by your Mac – including Chinese and Japanese, as well as Unicode.

One of BBEdit's strongest features is its search and replace function, which can operate across a number of documents, and use grep – a Unix search program – for more sophisticated pattern matching. Version 6's improved multi-file search capability lets you specify precisely which files to look through, and save the search parameters as a filter for repeated use. Full AppleScript support means just about any repetitive task can be automated.

However, the most extensive support



### Code of conduct

BBEdit's flexibility and strong features mean that it appeals to a number of different users – including freelance hackers. Programmers and scripters can make use of the fast searching tools and colour coding to jot JavaScript, punch Perl, or lay down some Lingo.

in BBEdit is for those of us creating Web pages, with a host of tools and commands for writing in raw HTML.

An HTML tools-palette contains a full range of common HTML tags and features – such as handling fonts and inserting images. It also helps with more-involved HTML, such as framesets, tables, and forms.

### Macworld's buying advice

It's not an HTML novices tool – it won't construct pages – but if you know what you're doing, it's a great way to speed

up the process. There are even tools for checking syntax, checking that links work – both internal and external – and a built-in FTP server uploads pages to a Web host, or even edit a file remotely. Version 6 adds support for WML, XHTML and PHP, and MacPerl – the Mac version of the ubiquitous Perl scripting language – is now fully embedded into BBEdit.

There's little here that will make version 6 a must-have upgrade for most users, but there are many minor additions that to some will be a godsend.

**Martin Gittins**



Dyslexia teaching-aid

## Type & Talk 4

**Publisher:** Help Systems  
www.texthelp.com

**Distributor:** Sight & Sound  
(01604 798 070)

**Pros:** Plenty of intuitive features for pupils with learning difficulties; good value.

**Cons:** Possible Java stability issues.

**Min specs:** System 7.6.1; 64MB RAM; Mac Runtime for Java 2.1.4.

**Price:** Single-user licence, £85; unlimited site-licence, £250 (both prices exclude VAT).

**Star Rating:** ★★★★★/7.5

Type & Talk (T&T) 4 is a reading and writing package for pupils aged 7-12 with learning difficulties – typically, dyslexia.

Because dyslexics can experience difficulty with reading, T&T can speak text when highlighted on screen – and all clickable icons can also be spoken. Words can be spoken letter-by-letter, word-by-word or sentence-by-sentence.

Voice volume, pitch and speed can be adjusted to suit the individual, and all the Mac OS Voices are available to T&T. Although word-processing packages have spell-checks, these are no good for those with learning difficulties, because they often can't read or interpret suggested corrections. T&T bridges this divide using a number of key features.

One is its Homonym Checker. Homonyms are words that sound similar, but have different meanings and spellings

– there and their, for example – and they often trip-up dyslexics. Normal spellcheckers won't flag-up homonyms, but in T&T they appear in blue type. When the user clicks on a blue word, a complete list of alternatives and meanings is displayed in a separate column.

Because dyslexics tend to spell phonetically, a phonetic spell-checker corrects the most complex of errors. Fizicks, instead of physics, is an example.

For students who struggle to form words and sentences, T&T's Prediction feature provides a useful crutch. As the student types in the first letter of a word, a list of words are suggested in a word-prediction column.

T&T also has a spelling log, which records the type of mistake made, so teachers can draft individualized education plans.

For users who want to use words creatively, there is Word Wizard, which offers step-by-step guidance towards the word the user needs to type. There is also a thesaurus, complete with spoken sample-sentences to give contextual help.

### Macworld's buying advice

T&T is Java-based, meaning it's not Mac-specific. It crippled my blue-&-white G3 and I had to clean-reinstall Mac OS 9. T&T publisher, Help Systems, insists that extensive Mac-based testing was carried out prior to release – and did run problem-free on another G3 Mac.

Type & Talk has been designed with classrooms in mind. A £250 school site-licence allows the software to be installed on a network for use on an unlimited number of machines. If a school has just one machine, a multi-profile function allows an unlimited number of users to save individual lessons and preferences.

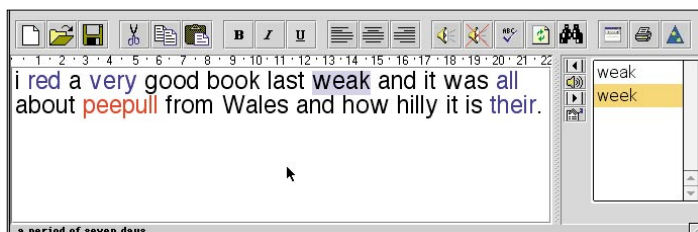
T&T may also appeal to those with a dyslexic child. A simple-to-follow manual is provided with the software and, for those who can't read, the same information can be spoken within T&T.

VAT can be claimed-back by schools and individual users if that user has a registered learning difficulty.

**Sean Ashcroft**

### Word class

Type & Talk 4 flags-up homonyms in blue text and offers alternatives, complete with meanings, given at the foot of the window. Spelling mistakes are highlighted in red.





## PitStop Pro 4.5

**Publisher:** Enfocus [www.enfocus.com](http://www.enfocus.com)

**Distributor:** Computers Unlimited  
(020 8358 5858)

**Pros:** Excellent set of production editing-tools; comprehensive global edits.

**Cons:** Some incompatibilities with Adobe InProduction.

**Min specs:** Adobe Acrobat 4.05; Power Macintosh running Mac OS 8 or later.

**Price:** Full version, £299; upgrade from version 4.0, £79; upgrade from other versions, £149 (all prices exclude VAT).

**Star Rating:** ★★★★★/8.6

The rise of the PDF format has been interesting, especially with Adobe InDesign and Illustrator 9 using it as a standard file-format. However, for those of us who work in pre-press and/or publishing, there's still a problem – namely, how to edit and correct PDF files. PitStop Pro 4.5, an Acrobat 4 plug-in, may be the answer.

To start with, a PDF file's quirks have to be analysed. PitStop Pro's Preflight Panel is brilliant for this, coming with seven profiles that include Acrobat's three standards, plus the likes of CD-ROM publishing and mono-laser printer. No preflighter is easy to use, but this one produces a comprehensible report that can be followed up – unlike Adobe InProduction, which requires a

much higher level of understanding.

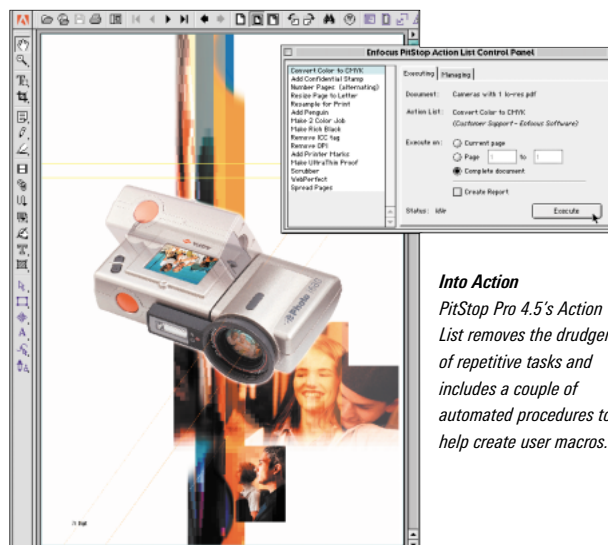
A file with mixed CMYK and RGB images and colours is a common problem. Previously, PitStop Pro could handle only global colour changes.

Now it can also convert pixel images from RGB to CMYK, and also supports ICC profiling of individual images.

With CTP (computer to plate) from a PDF workflow becoming more fashionable, it's important to keep file sizes down. PitStop Pro can now resample images using one of three techniques: average downsampling, subsampling and bicubic downsampling.

Take the common font problem of an embedded TrueType typeface that simply won't RIP to an imagesetter. Such a font can now be changed globally with additional adjustment of character and word spacing. In fact, PitStop Pro 4.5 can change numerous objects globally, as well as page-related characteristics, including the various page boxes. Of these, the trim box is probably the most important, as it dictates the final physical size of the document. Objects that fall outside of this box can be removed.

Of all the new features, the most powerful has to be the Action List. Almost any repetitive task can be carried out as a sequence with the default list of 15 actions – including various conversions, resizing and resampling operations. The "grab undo" facility, where a bunch of edits can be reviewed as a list, and the "save as action list"



### Into Action

*PitStop Pro 4.5's Action List removes the drudgery of repetitive tasks and includes a couple of automated procedures to help create user macros.*

function in global changes, make user macros relatively straightforward to create.

### Macworld's buying advice

The list of excellent new features in PitStop Pro 4.5 is long. You can even replace an object with one from another PDF and then manipulate it into position by scaling and rotating – although this isn't compatible with InProduction.

If editing – in the production sense – is important to you, then PitStop Pro 4.5 is an essential tool.

**Vic Lennard**



## Studio Artist 1.5

**Publisher:** Synthetik Systems

[www.synthetik.com](http://www.synthetik.com)

**Distributor:** Computer Warehouse  
(020 8400 1235)

**Pros:** Unmatched effects and image-cloning features.

**Cons:** Complex, un-Mac-like interface.

**Min specs:** Power Macintosh; Mac OS 8.5 or later.

**Price:** £215 excluding VAT

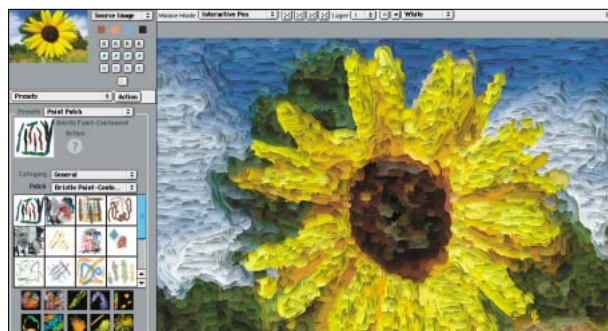
**Star Rating:** ★★★★★/7.9

Synthetik Systems' Studio Artist is about as different from other paint programs as it is from a can of paint. Billed as the world's first graphics synthesizer, the program offers an astounding array of tools for creating still images and animations. And version 1.5 adds the ability to animate the properties of brush strokes over time. But Studio Artist's unique tools are accompanied by an interface that takes a while to learn.

Studio Artist's interface uses a music-synthesizer metaphor. You brush effects onto a canvas using patches, which range from natural-media effects to hallucinatory swirls. More than 600 patches are included – and you can also build your own. But the program's most impressive feature is its ability to clone an image: it can sample the colour in an image, and then use that colour to paint a second image using the currently selected patch. You can easily turn a photo into a watercolour, for example, by painting over the image using the watercolour patch. Unlike other programs that offer cloning features, such as Corel's Painter, Studio Artist uses complex algorithms that clone intelligently.

One of the best features in Studio Artist 1.0 is its ability to turn QuickTime movies into animations. Version 1.5 goes a step further, with a sequencer that lets you animate the parameters of your patches over time to create wild, ever-changing paint effects.

The new Texture Synthesizer offers an overwhelming assortment of controls for creating textures. Using the synthesizer



and the new animation features, you can render everything from complex morphs to psychedelic textures and colours. Another new feature, a set of 3D-lighting tools, lets you control how light interacts with a painted surface creating textures and complex lighting-effects that would otherwise require years of training.

### Macworld's buying advice

With its complex, un-Mac-like interface, Studio Artist 1.5 may baffle those with a short attention span – but it contains some powerful digital-editing tools.

**Ben Long**

### Auto sunflowers

*Studio Artist's auto-painting engine does an incredible job of generating strokes that follow the lines, contours, and forms of an underlying image.*





Web-stream player

## QuickTime 5 Public Preview

**Publisher:** Apple  
(020 8358 5857)  
[www.apple.com/uk](http://www.apple.com/uk)

**Pros:** Loads of new features.

**Cons:** It doesn't include all the features promised for the shipping version.

**Min specs:** PowerPC processor; 32MB RAM; System 7.5.5 or later.

**Price:** Free.

QuickTime 5, the long-awaited upgrade to Apple's multimedia system-software, is finally here – sort of. Apple has announced a preview release of QuickTime 5, the full version of which is slated to ship early next year.

We took QuickTime 5 Player for a test drive, paying particular attention to the user interface. It's important to note that QuickTime is both an application and a set of developer resources. Some of the new features, such as real-time video-editing effects and MPEG-1 export, are not available in the QuickTime Player. Instead, the features are targeted at developers for incorporation into future releases of their applications. One feature originally promised for version 5, MPEG-2 import and export, won't appear until a future QuickTime update.

As with QuickTime 3 and 4, version 5 will be available in a free version and a £20 Pro version. The former offers basic playback capabilities. The latter offers limited editing features, as well as the ability to loop movies, save them to disk and play them full-screen. If you've already upgraded to the pro version of QuickTime 4.x, QuickTime 5 automatically takes on the Pro features. If you haven't upgraded to Pro, the new QuickTime Player offers the same limited playback options as before. You can't actually purchase the Pro version of QuickTime 5, but you can buy QuickTime 4.x Pro and then download the QuickTime 5 preview.

Although QuickTime 5 is not a native Mac OS X application, the player conforms in part to Apple's Aqua interface guidelines. In the upper left are three standard Aqua window controls that resemble coloured glass beads – Close, Minimize and Maximize. The Close control works as you'd expect, while Maximize functions like the current Zoom box. However, the yellow Minimize control serves only a placeholder function, because Mac OS 9 does not provide for minimizing windows.

The brushed-metal look of the QuickTime 4.x player drew heaps of criticism from interface experts, who derided its circular volume control, Favorites drawer and other un-intuitive elements. The new player makes some overtures to the critics by removing the Favorites drawer, and replacing the volume wheel with a slider. However, interface experts will likely take issue with other features. For example, an Apple logo in the lower-left corner looks like a button, but serves only as an ornament. A panel on the bottom of the player resembles a drawer, but again, functions only as a graphic element.

You display video controls by making a menu selection, rather than through a



### TV on demand

QuickTime 5 Public Preview features a revamped interface – for instance, functions, such as brightness, can be accessed through an on-screen, TV-control-like bar.

button on the player itself. The settings appear directly within the video window as a series of thin vertical lines, much like the controls on monitors and TV sets. You can access sound controls – bass, treble and balance – through a menu selection or by clicking on a graphic-equalizer icon on the right of the player. The equalizer appears only in movies that include an audio track, but you can display the sound controls at any time using the menu selection.

To access Favorites, you click on a TV button in the lower right, which replaces the player interface with a two-tabbed panel. One tab, identified by a QuickTime TV logo, accesses QTV channels. The other, identified by a heart symbol, contains your personal favourites. To return to the player interface, you click on the same "TV" button, which isn't very intuitive, because the label should reflect the button's function.

QuickTime 5 includes a new version of QuickTime VR that offers cubic-panorama capabilities along with the previous cylindrical panoramas. In addition to letting you look left and right within the VR scene, a cubic panorama lets you look all the way up and down. The preview supports this capability – once you've installed QuickTime 5, you can visit Apple's QTVR gallery and view sample cubic-panoramas. It works pretty much as you'd expect: you look up and down by dragging the mouse vertically instead of horizontally. You can also move diagonally.

The upgrade adds several new connection speeds, primarily geared toward ADSL and cable-modem users. The connection options are: 28.8/33.6Kbps; 56Kbps/ISDN; 112Kbps

Dual ISDN/ADSL; 256Kbps ADSL/Cable; 384Kbps ADSL/Cable; 512Kbps ADSL/Cable; 768Kbps ADSL/Cable; 1Mbps cable; 1.5Mbps T1/Intranet/LAN (Local Area Network); and Intranet/LAN.

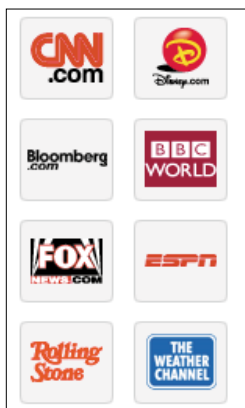
Perhaps the biggest question about QuickTime 5 is one that might not be answered for several months. The upgrade supports Sorenson Video3, a new version of QuickTime's default compression/decompression software. However, Apple said that Sorenson Video3 support is not expected until the final release of QuickTime 5 early next year. A key issue will be the quality of live streaming-video, an area where RealNetworks appears to have an advantage, with its RealSystem8.

### Macworld's buying advice

A few caveats from the read me file: A new version of Sorenson Broadcaster will be required to work with the preview release; Apple and Sorenson said they are working on one. Changes in the music synthesizer could cause memory allocation problems in some software titles, particularly games; Apple has asked developers to monitor their applications for this issue. Apple said it's also working to fix a problem with TunePlayer and SetNoteChannel system calls, again an issue of primary concern to developers.

When you install QuickTime 5, it replaces previous QuickTime versions on your system. If you want to go back to QuickTime 4.1.2, you need to uninstall version 5 using an option in the installer, and then install QuickTime 4.1.2. The UK version of QuickTime 5 Public Preview is available from the Apple UK Web site ([www.apple.com/uk/quicktime](http://www.apple.com/uk/quicktime)).

**Steven Beale**



### Channel hopping

QuickTime 5 supports all the old channels available on Apple's network.



### Neck strain

The new version of QuickTime VR allows stitched pictures to be viewed through all angles – including vertically.

# Which Mac?

Macworld's guide to choosing your first or new Mac. By Simon Jary



One are the days when Macs cost more than Windows PCs. The high-quality, entry-level iMac costs just £649, is faster and has more features than many cheapo PCs. Some of the Macs featured here do appear more expensive than their Windows equivalents, but weigh up the extras you get by choosing a Mac: iMovie 2, FireWire, more than one processor, professional networking, and award-winning design. This *Macworld* guide takes you through your most important choices, offering advice and upgrade tips along the way.

page 80





# iMac: from £649 bargain to DV Special Edition wonder

The iMac is Apple's most successful Macintosh ever. Its innovative look shook the design world out of a boxy, plain-colour rut. More importantly, it truly re-invented the term "personal computer" for the Internet age. Although it debuted back in late 1998, the iMac is still the PC for the 21st century. The iMac's appeal is spread across the board: functionality; ease of use; features; looks; and price. No other PC can match it on all these key attractions.

## Functionality

What is the point of a PC these days? Years ago, a PC was a glorified word processor that could maybe play a few basic games. Nowadays, the first thing people want from a personal computer is Internet access. And the iMac is the fastest way you can get connected from buying the machine to opening the box and setting it up on your desk.

One of the great things about the Internet is that you don't need the very fastest computer to use it at full tilt. The iMac comes with a 56Kbps modem – the fastest analogue modem around. So even the entry-level iMac is as fast at browsing the Web or sending/receiving email as the 500MHz Power Mac G4 or a 1GHz Pentium III PC – unless those machines include expensive digital Net-access extras.

The iMac is still proficient at the traditional PC tasks. Word processing and other business applications are included for free with the iMac, as parts of the AppleWorks 6.0 program suite. AppleWorks includes simple drawing and painting programs, as well as spreadsheet, database and presentations tools. Microsoft's Office 2001 for Mac is a collection of beefier business applications (Word, Excel and PowerPoint) that are fully compatible with their Windows counterparts. Office 2001 (reviewed in *Macworld's* November 2000 issue, and featured in the October issue) costs about £399 (excluding VAT). AppleWorks is OK for most home users, but the Office suite is recommended for more serious work.

The iMac's PowerPC G3 processor is easily fast enough for nearly every program available for the Mac. It can handle Adobe's powerful Photoshop image editor,



### Bargain iMac

*The entry-level iMac costs just £649 including VAT. With this model and at this price, Apple at last has a product that beats Windows PCs both on quality and cost. It's not the machine for digital video, as it doesn't have a FireWire port – but for nearly every other task, this iMac is perfect. Available in Indigo Only.*

Macromedia's Dreamweaver Web editor or Quark's XPress DTP page-layout program, for instance. All three, however, will require that you add some memory (RAM) to all but the Special Edition iMac. As RAM isn't that expensive these days, that's no big deal (see "Memory matters", page 90.)

All the iMacs except the entry-level model come with Apple's iMovie 2 video-editing software. That's what the DV stands for: digital video. If you have a digital camcorder with a FireWire connection – this is also known as i.Link by Sony and IEEE 1394 by real techies – then the world of professional-looking video production is at your fingertips. iMovie 2 will also benefit from you adding some more RAM.

And, of course, the iMac is more than capable of impressive gaming performance, with its ATI RAGE 128 Pro graphics accelerator coming with 8MB of SDRAM graphics memory. Whether you like blasting aliens in Quake, planning empires in Civilization, or playing a young Jedi in Star Wars: Racer, the iMac is powerful enough for them all.

## Ease of use

Apple reckons that even a total novice can be hooked up to the Internet just 15 minutes after taking the iMac out of its box. In our tests, most computer rookies were connected within half an hour – a record that Windows-PC manufacturers can't even dream about. Most of the iMac's software is already ready and waiting for you, but the few installation steps you have to make are hardly head-scratchers. A bright new multimedia introduction to setting up – MacBuddy – now makes things even easier.



### Bargain DV iMac

*If you want to make desktop digital movies, the iMac DV represents great value. For just £799 (including VAT), you get all the performance of a fast G3 processor with speedy FireWire connectivity to attach your digital camcorder. You get a CD drive instead of DVD, but most people would prefer their DVD as a TV separate anyway. It's available in Indigo and Ruby red.*

All you have to do to get your iMac up and running is take it out of the box, plug in the power cable, keyboard and mouse, and press the On button. The iMac set-up manual is very brief, because there's not much else you need to do. I would, however, recommend that newcomers buy a book, such as *iMac for Dummies* or *Macworld Mac OS 9 Bible* (both IDG Books), to really get the most from your iMac.

## Features

The iMac has nearly all the high-end features of even the most expensive Macs – and a lot more than most Windows PCs. Full-size keyboard and optical mouse are connected via the Universal Serial Bus (USB) standard that allows you to add most modern peripherals, such as printers, scanners and digital-camera card readers. You can network your iMac to other Macs via fast 10/100BaseT ethernet, or add Apple's AirPort technology to create a wireless network and rid yourself of some of those cables.

All but the entry-level iMac include two ultra-fast FireWire ports for connecting digital camcorders or adding external hard drives. Even this iMac has a 7GB hard drive, so you won't need to add an external hard drive in a hurry. Digital video files do fill up hard drives pretty fast, but the DV iMacs can have massive 30GB drives.

Some iMacs (see the feature-table "Apple's current desktop Mac range" on page 86) also have DVD drives that accept standard CDs and can also play DVD-Video discs. There's no floppy drive, but this shouldn't worry you as they hold only 1.4MB anyway – you can email that size of file in under a minute.

With an iMac, there's no need to go out and buy an extra monitor – it's all built in. The 15-inch built-in screen is sharp and includes a special Theatre Mode for enhanced brightness in full-screen video. There's a surprising amount of screen space in that 15 inches, but some – especially graphic designers and page-layout artists – will hanker after a bigger display. They should look to those Macs that come with no screen built in or even a PowerBook, to which you can attach a monitor (see "Display" box-out, page 84).

## Connections

Not so long ago Macs connected to peripherals such as scanners, CD recorders and external hard drives via a cable link known as SCSI. SCSI still exists, but you need to add a special card (from about £40) to your new Mac if you want to attach a SCSI device these days. Since 1998, Apple has replaced its Macs' SCSI ports with two new connections: USB and FireWire.

USB (Universal Serial Bus) lets you connect up to 127 devices to your Mac – compared to SCSI's mere seven. Also, unlike SCSI, USB is hot-pluggable – meaning you can yank a printer's cable from the back of your Mac and replace it with a digital-camera card reader without your computer crashing or you needing to restart to get your new peripheral working.

SCSI is faster than USB – it has a data throughput of between 5MB and 160MB per second (MBps), compared to USB's 1.5MBps. And that's why USB is aimed at those computer peripherals that don't need a lot of bandwidth: your mouse and keyboard, for instance. Many ink-jet printers also use USB as a connection, because all the heavy rasterization takes place on your Mac before the document gets sent to the printer.

Those peripherals that do need SCSI-like speeds – external hard drives, scanners, etc – connect to your Mac via the FireWire port. FireWire – invented by Apple and licensed by companies such as Sony and other DV camcorder manufacturers – has a maximum throughput of 50MBps. Digital video is the main purpose of FireWire – also more boringly referred to as IEEE 1394 and i.Link. All of Apple's current Macs – except the entry-level £649 iMac – come with at least one FireWire port and the wonderful iMovie 2 video-editing software, so movie-making is a real synch on the Mac.

Like USB, FireWire is hot-pluggable, and you can daisychain up to 63 additional peripherals with none of the troublesome IDs, DIP switches or terminators required by SCSI.

Even the planned second-generation, 100MBps FireWire won't catch top-level SCSI for speed, so SCSI cards are available for those who need it.

Every Mac comes with the fastest-available analogue modem, running at 56Kbps. If you want faster Internet access, you'll need a digital connection, such as ISDN or ADSL (see our feature this month, page 97).



## Graphite option

The top-end iMac DV SE is available in Snow white (see page 83) and Graphite (above). It costs £550 more than the entry-level model, but you get a lot of features for the extra cash. When choosing a Mac, decide exactly what you want it for now and what you might consider using it for in the future. Macs last a lot longer than PCs – an iMac, for instance, would easily last a first-year student through to graduation and beyond.

## Macworld LAB TEST

## New iMacs speed tested

Best results in test.

Mac model	Speedmark 2.1	Quake III
<b>iMac DV SE G3/500</b>	127	33.6
<b>iMac DV+ G3/450</b>	119	25.2
iMac DV SE G3/400 (1999)	109	25.4
<b>iMac DV G3/400</b>	105	23.0
iMac G3/350 (1999)	100	22.0
<b>iMac G3/350</b>	97	21.0

Speedmark 2.1 scores are relative to an iMac 350MHz (1999), which is assigned a score of 100. Quake results are in frames per second. We tested each system with Mac OS 9.0.4, 64MB of RAM (128MB RAM for the iMac DV SE G3/500), and virtual memory enabled. We set displays to 1,024-x-768 pixels, and 24-bit colour. Speedmark is a suite of common tasks. Currently available models in **bold**.

## Pro Mouse and Pro Keyboard

Every new desktop Mac (Power Macintosh, Cube and iMac) comes with Apple's new Pro Mouse and Pro Keyboard. Both are improvements on their predecessors, and represent genuine benefits of choosing a Mac over a Windows PC, or upgrading your old Mac to a new one.

The Pro Mouse is optical – there's no ball underneath it telling your cursor where to point. Now, it's all done cleverly with light. This means that there's no moving parts to gather dirt, dust and general desk debris. It also has no button, as its whole adjustable case becomes your clicker. It's smooth, slick and sexy – in a slinky red-light kinda way. It beats the paws off Apple's old round mouse and waggles its silver tail at most of those found with Windows PCs. PowerBook and iBook owners should also consider buying one (an extra £45, inc. VAT)... don't let your finger do all the walking.

The full-size 108-key Pro Keyboard boasts 15 programmable function keys, and new keys for Page Up and Down, Home and End, Insert and forward Delete, as well as an Eject key for your CDs or DVDs. Like the Pro Mouse, the Pro Keyboard also looks great. It's finished in silvery Graphite plastics, and offers a spare USB port for attaching peripherals.







#### More powerful DV iMac

Desktop digital movies can take up a lot of hard-disk space, and the iMac DV+ comes with an enormous 20GB hard drive. This model also has a DVD drive, which can play DVD movies and work with standard CD-ROMs. The 450MHz G3 processor is certainly an impressive performer. This model has the greatest case-colour choice, as it's available in Indigo, Ruby, and Sage green.

#### Looks

There's no doubt that the iMac is the best-looking consumer PC around – by a very long way. But the iMac's design is not just pretty plastics. Adding more memory is a snip, via the “hidden” door at the rear of the case. While it's certainly not portable, you can pick the iMac up using the large handle on the top. This vented handle area is also where the air heated by the components escapes – thus eliminating the need for a noisy fan. Like the G4 Cube, the iMac is virtually silent – unlike most Windows PCs.

#### Price

For such a powerful and versatile PC, the iMac is an absolute bargain. The entry-level iMac costs just £649 – including VAT! You don't get a FireWire connection or iMovie 2 software, so digital-video editing is out of the question. But if home movies aren't your thing, this is a remarkable deal – even if it's available only in Indigo (the best looking colour, anyway). The 7GB hard drive is ample, and the 350MHz G3 chip speedy enough.

Available in Indigo and Ruby red, the next level up is the iMac DV, which costs £799. The extra £150 gets you the digital-video essentials (FireWire and iMovie 2), as well as the extra colour choice. The 10GB hard drive should suffice, as long as you don't fill it all up with your home movies (a minute of movie takes up about 200MB of hard-disk space). Like the entry-level iMac, the iMac DV comes with a CD drive, and not the DVD that the DV+ and DV SE ship with.

The 450MHz iMac DV+ has a 20GB hard drive – which will better suit movie makers – and a DVD drive. It is also available in the pale Sage green as well as Indigo and Ruby. The top-end iMac DV Special Edition is the ultimate, boasting 128MB of RAM, a 30GB hard drive, DVD, and 500MHz G3. If you want an iMac in either cool Graphite or Snow colours, then the DV SE is the only way to go.

Choosing which iMac to buy depends on whether you want digital-video capabilities or not, and then price.

**Simon Jary**

## FireWire and iMovie 2

**M**aking movies used to be expensive, tricky and beyond most people's creative abilities. With a FireWire port (Apple's gift to the digital-video world – and licensed by many camcorder makers, such as Sony), you can connect the latest digital camcorders and transfer your movies straight to your Mac. It's dead easy – and at 400Mbps, pretty fast, too.

Once that movie footage is on your Mac, you'll want to edit it straight away. Apple's digital video-editing software, iMovie 2, ships for free on every FireWire-enabled Macintosh. This is no throw-away freebie. iMovie 2 is a very competent software package. Better still, it is incredibly easy to use and simple to master. You won't believe how easy it is, with iMovie 2, to edit your movies, and add special effects, audio and titles. There's a slide bar to speed up, slow down, or even reverse your video clips. Music and audio effects can be faded in and out. There are trails and mirror effects, as well as black-&-white and sepia tones. See *Macworld's* review, September 2000.

The larger your hard disk, the more video clips you can combine to make longer movies. The iMac DV's 10GB hard disk should suffice for most home movies, but the more ambitious will need to add another FireWire hard disk or buy a Mac with a larger drive.

The iMac DV SE and top-end Power Mac G4 are both available with 30GB disks. iMovie's interface, shown here, is designed to perfectly fit 1,024-x-

768-pixel screens, so it's ideal for the iMac's built-in display. It's even fine on the iBook's 800-x-600-pixel screen.

There are many other video-editing programs available, both on Mac and Windows – but none is as powerful and simple as Apple's iMovie 2. A new breed of film-maker is born.



#### The ultimate iMac

*The iMac DV Special Edition has the lot. Its 500MHz G3 processor is super fast; its 30GB hard drive capacious. It comes stacked with a generous 128MB of RAM, which should save you having to buy more straight away. The DVD drive lets you play movies, and the FireWire lets you make and edit your own. To show off these special qualities, the DV SE is available in cool Graphite and Snow.*

▶ *Macworld's Macintosh Buyers Guide continues on page 84*




# G4 Cube: Cool power



## Display

**P**ower Mac and Cube owners will need to buy an external monitor. Apple offers three – the flat-panel 15-inch Studio Display and 22-inch Cinema Display, and the 17-inch Studio Display CRT monitor – that connect via the ADC monitor port. You can connect any compatible third-party screen via the VGA monitor port. The ADC (Apple Display Connector) port is pretty smart. It lets you turn the computer on and off from a single power switch on the display. It also carries not just the picture signal, but the display's power from the Mac – thus reducing cable clutter. However, only these three rather expensive displays utilize the ADC. They all look great and are top-notch quality, but less expensive displays do exist.

Although the iMac comes with its own built-in 15-inch display, you can add another via a video-mirroring port that displays an image identical to that shown on the built-in screen – invaluable for the education market. The PowerBook has dual-display capability via its VGA out port, meaning you can add an external monitor and use it either as your main screen or with the portable's built-in 14.1-inch (diagonal) TFT XGA active-matrix display. Alternatively, you can use the S-Video port to connect your PowerBook to your television, letting you watch DVD movies on the big screen. You can't add a second display to the consumer laptop iBook, but you can plug it into your TV via the AV port.



Apple won a heap of design awards for the iMac – a personal computer powerful enough to handle most applications, but cute enough to show off in the home. The company's most recent new PC is also a delight to look at, and a marvel of modern engineering.

The Power Mac G4 Cube is exactly that – a Power Mac G4 minitower compressed into an eight-inch cube. It might lack the minitower's expansion slots, but otherwise it is essentially the same professional workstation. Buying a G4 Cube is a design statement *and* a desire for professional computing power.

The Cube is a great example of Apple's industrial design and hardware engineering, but it doesn't come cheap. The least expensive model (450MHz) costs £1,249 excluding VAT. In comparison the entry-level Power Mac G4 (400MHz) minitower costs £1,149. Sure, you get an extra spurt of G4 speed, but you don't get the slots and it costs £100 more.

The very fact that you're considering a Cube probably means that you're unlikely to require those "missing" three PCI slots. Now that digital-video uses FireWire (the Cube has two such ports), and the best video cards fit in the AGP 2x slot, there's a lot less call for PCI slots these days anyway. If you want to have a second monitor working off your Power Mac, you'll need a PCI slot for an extra graphics card. So if this is on your list of priorities, the Cube isn't for you. The Cube can't run one display from the ADC port and another from the VGA – it's got to be one or the other. And if you want to run anything with a SCSI connection, a Power Mac (with added SCSI card) is a better bet than a Cube with a SCSI-FireWire adaptor that will limit your SCSI throughput to FireWire's maximum. These situations shouldn't affect most people, so the Cube is just as good a workstation as a minitower Power Mac.

In reality, the Cube just *looks* expensive. If you remember that it is a fully fledged Power Mac (with a couple of great-sounding and good-looking Harman-Kardon speakers), its price is in line with Apple's other pro

machines – and they're as cheap as they've ever been. Of course, it would sell a lot more units if it was cheaper. And Apple does seem to be realizing this. Rather quietly, Apple has announced plans to introduce lower-cost Cube models next spring (see News). However, the company declines to offer any details about future products. In the meantime, Apple is offering a £250 "rebate" to anyone who buys a Cube with one of the new Apple displays (offer ends December 31).

The expensive thing about the Cube is its aesthetic need for one of Apple's flat-panel displays. Apple's 17-inch CRT costs just £349 (excluding VAT) and has a flat screen, but it's a bit of a hulk compared to the Cube. The 15-inch Studio Display is fantastic – both in terms of quality picture and stunning looks – but £699 is going to hurt. The 22-inch Cinema Display costs a whopping £2,799. You get a lot of very tasty screen, but three grand?! These aren't expensive for LCD displays – in fact, £699 for the 15-inch Studio Display is an average price for a very decent monitor. It's the fact that the Cube looks cheated next to anything but one of these flat-panels that makes it *appear* expensive. LaCie's 22-inch Electron Blue CRT display costs the same as Apple's 15-inch LCD, but it doesn't fit with the Cube aesthetically.

If you can live with a cheaper display, the Cube is well priced. You don't get the minitower's PCI slots, but you get everything else. The Cube looks like a novelty, but acts like a pro workstation. Unfortunately, the price gap between the top-end iMac DV SE and Cube with flat-panel display is a gulp-inducing £1,090 including VAT (£840 with the rebate). This stops it being a solution for people who crave a larger screen than the iMac's.

Choose the Cube if you can afford to splash the cash on the flat-panel display or live with a cheaper, less attractive monitor. The Cube is a tiny G4 powerhouse. And if looks could kill, the Cube would be the Hannibal Lecter of the computing world.

## Cracks or lines?

If you peer very closely at the Cube's crystal-clear casing, it's possible to spot a couple of hair lines. Some call these 'cracks'.

Apple now claims that these "small plastic flow lines" were in fact a side effect of the manufacturing process, which has now been refined to stop them occurring. Whatever, the lines aren't easy to see, and they won't affect the performance of the Cube or damage the casing.

# Power Mac G4: Tower talk



The Power Mac G4 is a great professional workstation. Like all of Apple's computers, it looks like no other machine in its class. But looks aren't everything, and the Power Mac's design is actually a wonder of practical design.

Forget the cool Graphite colouring and clear-plastic elements, the Power Mac is simple to set up and easy to upgrade. Much like the iMac, set-up is a breeze with its funky video-based MacBuddy installation. Once, it's up and running, the Power Mac is built for ease of use. To add memory chips, internal hard or Zip drives, or processor upgrades, you simply pull open the Mac's side door – even if it's still switched on and running. The Power Mac is certainly not just a pretty face.

### Processor power

The PowerPC G4 processor is more than a match for its Pentium III rivals – even though its top speed is 500MHz, not the 1GHz boasted by Intel. System performance isn't down to a straight comparison of chip megahertz. In fact, Apple claims that in a head-to-head fight, the 500MHz G4 is about twice as fast as a 1GHz PIII when tested using Adobe Photoshop.

However, Apple is still seen to be losing the megahertz war in the eyes of the public. So, the company has fought back by shipping Power Macs with more than one chip in them. So, the top-end Power Mac now boasts two 500MHz G4 processors. Unfortunately, two 500MHz chips do not equal 1GHz. It's a lot more complicated than that. And this is where deciding which Power Mac to buy gets tricky.

The latest G4 Power Macs boast the same speeds as their predecessors – but they now house two G4 chips instead of one. This is good news – if you use Photoshop a lot or plan to upgrade to the forthcoming Mac OS X, which will use that second processor far better than Mac OS 9. But if your bread-and-butter applications aren't written specifically to take advantage of multiprocessing, you'll find that these new Power Macs are no faster than their single-chip predecessors. To save these people cash, Apple still offers a single-chip Power Mac – but only at 400MHz.

Both the applications and the system software must be explicitly designed to take advantage of multiple

processors. If you spend most of your work time using programs that don't support multiprocessing, you won't see much immediate benefit from the second processor in your Mac.

**The traffic cop** In any computer, the operating system doles out processor power. To that end, the OS contains a piece of software called a scheduler, which determines how just much processor time your software – including apps and many of the OS's components – can use at any one time.

In multiprocessor Macs, the scheduler determines which processor performs specific tasks.

Critics of the Macintosh operating system have long cited its lack of pre-emptive multitasking, a system that gives the operating system complete control over which

tasks get processor priority. (Mac OS X will offer this feature.) In contrast, since the days of the MultiFinder the Mac has used co-operative multitasking, a sort of honour system that allows any program to use the processor until it's ready to let go. That means a misbehaving task can hog the processor, causing all the other programs to slow to a halt. Now can you see why OS X's modern functionality is so eagerly anticipated?

Although the core of the current Mac OS doesn't do pre-emptive multitasking, you can find this feature if you know where to look. It's tucked away in Apple's multiprocessing software, built into the Mac OS since version 8.6 (and seriously updated in Mac OS 9, paving the way for these

new multiprocessor Macs). This component holds the key to making dual-G4 Macs work with today's operating system until Mac OS X becomes available.

**Today's multiprocessing problems**

Since Apple didn't design the classic Mac OS to do its work on multiple processors, it can't take advantage of them. The only beneficiaries of additional processors are pieces of software that take advantage of the pre-emptive scheduling in Apple's multiprocessing software.

Programs (such as the Finder) not designed to that specification can't use the second processor at all, and some types of programs wouldn't really benefit much from

### Storage: size and type

Mac hard-disk capacities are generous. Even the entry-level £649 iMac has 7GB of space. Most of this model's owners won't get anywhere near filling that with their AppleWorks files, digital-camera snaps and Web downloads. All of Apple's other Macs have powerful digital video-editing capabilities, and so require larger hard drives. Remember that just one minute of digital video takes up a stonking 200MB of hard-disk space (that's one gig per five minutes). Of course, you won't keep all your movies on your hard disk forever – but having as many gigabytes as possible is always going to come in handy. Power users should consider the AppleStore's build-to-order option of faster SCSI hard drives.

You can add external hard drives to get more gigs – although USB-based hard drives aren't recommended, so £649 iMac owners should archive files to CD or Zip to free up space. Other Mac owners can add external FireWire hard drives (much better than USB units). Power Mac owners can also install extra hard drives (SCSI or ATA) internally.

The best way to gigabyte happiness is to regularly archive your files to a CD. You'll need a CD burner, costing about £250; blanks CD cost under a pound if bought in bulk.

lomega's Zip disks can carry up to 250MB of data, and are popular enough for most people to have access to a drive – making Zip a handy form of removable storage. CDs are still cheaper because you don't need to ask for them back. Floppy disks? 1.4MB... use email, stupid...

Apple's current desktop Mac range														
Model	PowerPC processor	Base RAM	Max RAM	Hard disk	CD-ROM DVD	USB ports	FireWire ports	PCI slots	AirPort	Ethernet	iMovie 2 software	56Kbps modem	Graphics card	ADC/VGA
iMac	350MHz G3	64MB	1GB	7GB	CD	2	0	0	No	10/100	No	Yes	8MB ATI RAGE 128 Pro	No
iMac DV	400MHz G3	64MB	1GB	10GB	CD	2	2	0	Yes	10/100	Yes	Yes	8MB ATI RAGE 128 Pro	VGA VM **
iMac DV+	450MHz G3	64MB	1GB	20GB	DVD	2	2	0	Yes	10/100	Yes	Yes	8MB ATI RAGE 128 Pro	VGA VM **
iMac DV SE	500MHz G3	128MB	1GB	30GB	DVD	2	2	0	Yes	10/100	Yes	Yes	8MB ATI RAGE 128 Pro	VGA VM **
Power Mac G4 Cube	450MHz G4	64MB	1.5GB	20GB	DVD	2	2	0	Yes	10/100	Yes	Yes	16MB ATI RAGE 128 Pro *	ADC/VGA
Power Mac G4 Cube	500MHz G4	128MB	1.5GB	30GB	DVD	2	2	0	Yes	10/100	Yes	Yes	16MB ATI RAGE 128 Pro *	ADC/VGA
Power Mac G4	400MHz G4	64MB	1.5GB	30GB	DVD	2	2	3	Yes	10/100/1000	Yes	Yes	16MB ATI RAGE 128 Pro *	ADC/VGA
Power Mac G4 DP	2 x 450MHz G4	128MB	1.5GB	30GB	DVD	2	2	3	Yes	10/100/1000	Yes	Yes	16MB ATI RAGE 128 Pro *	ADC/VGA
Power Mac G4 DP	2 x 500MHz G4	256MB	1.5GB	40GB	DVD-R	2	2	3	Yes	10/100/1000	Yes	Yes	16MB ATI RAGE 128 Pro *	ADC/VGA

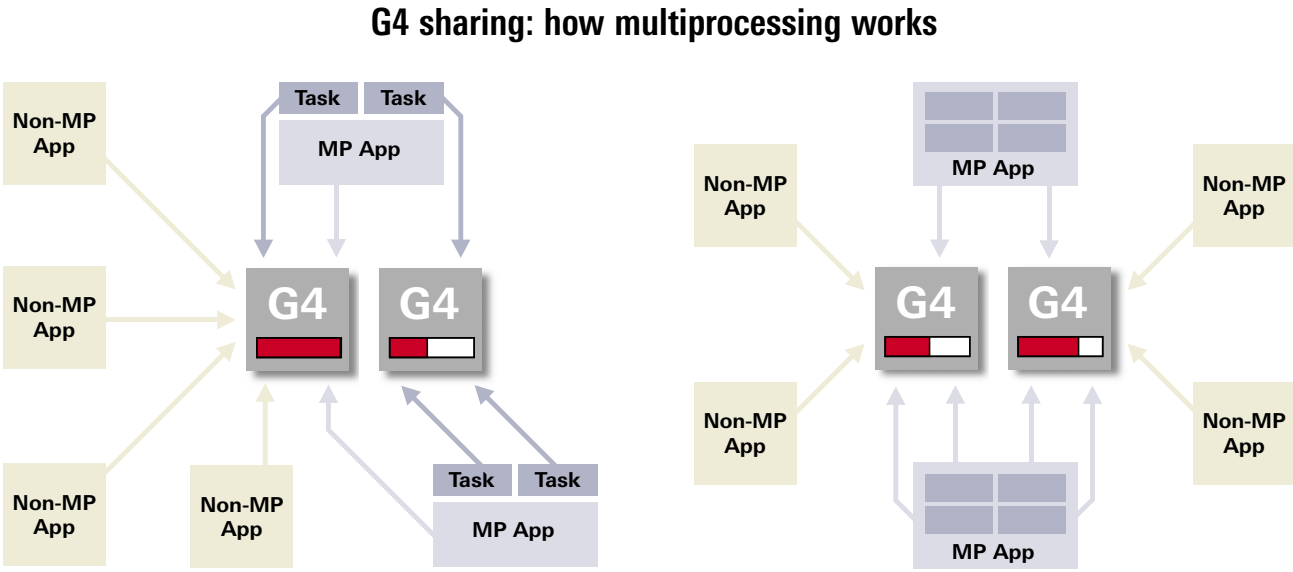
■ All iMacs ship with Mac OS 9.04, AppleWorks 6, QuickTime 4, Microsoft Internet Explorer and Outlook Express, Netscape Communicator, Bugdom, Nanosaur, Palm Desktop, FAXstf Pro, and Adobe Acrobat Reader.

■ All Power Macs ship with Mac OS 9.04, QuickTime 4, Microsoft Internet Explorer and Outlook Express, Netscape Communicator, Palm Desktop, FAXstf Pro, and Adobe Acrobat Reader.

■ AirPort card and Base Station available for an extra £319 (inc. VAT). AirPort allows you to access the Internet without attaching the modem cable to your Mac, as well as network Macs wirelessly.

\* 32MB ATI Radeon graphics card available as a £70 option on the online AppleStore.

\*\* VGA Video Mirroring allows same image on iMac screen and second display, although this is restricted to 1,024-x-768 pixels.



In Mac OS 9 (left), most applications run on the primary processor, which bears the bulk of the processing load (signified by the red indicator bar). Applications that are multiprocessor-savvy can spin off additional tasks to the second G4 chip, providing a bit of a speed increase. In Mac OS X (right), non-multiprocessor applications can run on either processor – evening out the work the two processors must do. Multiprocessor-savvy software runs its various tasks on either processor – the operating system's scheduling software will give the job to the processor doing less work at any given time.



multiprocessing anyway. The speed of your hard drive limits disk-repair utilities, for example, and network speeds, as well as the drive, limit file transfers.

But plenty of apps do cry out for sheer number-crunching, processor-based performance: MPEG encoders, image processors, 3D renderers, and the like. These programs – Casady & Greene's SoundJam MP, Adobe Photoshop, and Maxon's Cinema 4D XL, to name three – are most likely to benefit from multiprocessing technology (as well as other performance-boosting systems, such as the Velocity Engine subprocessor on the G4 chip).

The current incarnation of the Mac OS supports asymmetrical multiprocessing, a system in which the OS and most apps run on a single processor while a few specific apps take advantage of other available processors. The term describes the imbalance of the load on various processors: in this configuration, the second processor often remains idle instead of speeding your Mac up (see "G4 sharing: How multiprocessing works").

Macworld Lab tests proved that multiprocessor-enabled applications such as Photoshop, SoundJam, and Cinema 4D XL are remarkably fast – although not quite *twice* as fast as the same apps running on single-processor Power Macs.

## Factor of ten

When Mac OS X arrives, today's dual-processor G4s will really come into their own, because Mac OS X supports symmetrical multiprocessing. This means it treats the available processors equally, balancing the load of your system over the whole array.

By virtue of its internal design, Mac OS X is natively multiprocessor-aware, and all of its functions can run on multiple processors, unlike those of the classic Mac OS. In day-to-day use, multiprocessor machines running Mac OS X should feel snappier than single-processor machines.

Applications written to Apple's Carbon specification will appear in the new Aqua theme, and should offer much

▶ page 90

## Radeon or Rage graphics card: which one for you?

A graphics card connects your Mac to a display. One graphics card is included with every Power Mac G4 and G4 Cube. This card comes installed in your computer's 32-bit, 66MHz AGP 2X slot. The standard card is an ATI Rage 128 Pro graphics card, which is a high-performance, high-resolution graphics accelerator. While it can cope with the needs of high-end design and publishing applications, Apple now offers an even better graphics card. Using the build-to-order (BTO) option on the online AppleStore, you can choose between the 16MB ATI Rage 128 Pro and a 32MB ATI Radeon graphics card (an extra £70).

ATI's Radeon is also shipping separately. The board (about £200) plugs into the Power Mac's AGP slot, and features 32MB of Double Data Rate (DDR) RAM, Radeon graphics processing unit, and Apple's latest OpenGL extensions, v. 1.1.5. A PCI version ships this winter.

We found the Radeon's 3D gaming performance impressive. It boasts fast frame rates at screen sizes that once would have been considered unimaginably large, and superior speed and quality at smaller screen sizes. The Radeon is ATI's answer to 3dfx's Voodoo 5 and Nvidia's GeForce 2 Ultra products.

**Hardware** The retail version of the Radeon board features an S-Video out for TV connections, a VGA out, and a DVI connector for flat-panel displays. (The build-to-order version from Apple forgoes the DVI in favour of Apple's own ADC connector.) The 32MB of DDR RAM allows the card to support a wide variety of screen resolutions, refresh rates and colour bit depths, up to 1,920-x-1,440 pixels at 75Hz and 32-bit colour.

Previously, ATI graphics cards used high-speed (166MHz now), high-bandwidth SDRAM (synchronous data

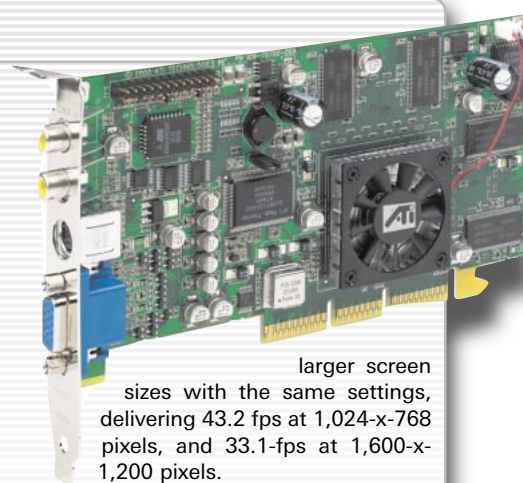
RAM). The DDR RAM used in the Radeon features the same speed and bandwidth, but reads and writes data twice per clock cycle. This allows DDR RAM to transmit twice as much data at the same speed as normal RAM. It thus allows the graphics processor to work more efficiently, waiting less time for the necessary data to get images to the screen.

With a memory bandwidth of 4.3Gbits a second, the Radeon card can generate 333 megapixels (Mpixel) per second and a 1-Gigatexel fill rate. (Texels are the repeated textures – groups of pixels in a pre-arranged format – that form the surface on a 3D model.)

The Radeon includes dedicated hardware to help with DVD scaling, motion compensation and de-interlacing, among other functions.

**Software** The Radeon requires System 9.0 or later, QuickTime 4.0 or higher and OpenGL 1.1.5. You manage the board through the ATI Displays control panel. In addition to setting resolution and colour depth, you can monitor memory usage, set keyboard shortcuts, get support information and use the Mac2TV Video Out software, which manages the Radeon's TV out. In addition to boosting 2D and 3D graphics performance, the Radeon includes software to accelerate the scaling and display of QuickTime movies.

**Performance** The Radeon was exceptionally fast at rendering OpenGL-based 3D games, such as Quake III Arena. With all of Quake's detail settings at maximum, the Radeon delivered an average of 49 frames per second (fps) at 640-x-480 pixels in 32-bit colour, in a 500MHz G4 with 256MB of RAM. A Rage 128 Pro, in the same 500MHz G4, and with the same settings, posted only 36 fps. The Radeon shined even brighter at



larger screen sizes with the same settings, delivering 43.2 fps at 1,024-x-768 pixels, and 33.1-fps at 1,600-x-1,200 pixels.

In a RAVE-based game, such as Unreal Tournament, the Radeon is no slouch either. Again, in a 500MHz G4 with 256MB of RAM, the Radeon delivered an average of 43.02-fps in Unreal Tournament at 640-x-480 pixels in 32-bit colour, with all detail options at maximum. At 1,024-x-768, the Radeon racked up 35.94-fps. A Rage 128 Pro, using the same settings, achieved 38.17-fps at 640-x-480 pixels, and 21.91 at 1,024-x-768 pixels.

The image quality of both games was excellent. We noted no artifacts or anomalies while running the benchmarks.

In our observations using Apple's DVD Player 2.2, the Radeon seemed to produce less skipping and almost no audio/video sync problems when compared to DVD playback using the Rage 128 Pro. However, the playback was not as responsive as with a dedicated DVD decoder card. Image quality was excellent.

**Conclusion** The Radeon performed reliably, and in many cases exceptionally. Anyone who plays 3D games on the Mac and is purchasing a Cube or a new G4 would be well advised to invest £70 in the BTO Radeon option – or invest in the separate card for under £200.

**David Read**

better stability (thanks to Mac OS X's new protected-memory model, which prevents a crashing app from bringing down your system). Carbon apps will also take advantage of multiprocessing in ways that current Mac OS applications can't. Those Carbon apps specifically written to take advantage of multiprocessing have complete access

to the chips. The OS can assign each individual task these apps undertake to a different processor, balancing the load and using processor power as efficiently as possible.

But even if a Mac OS X program wasn't written with multiprocessing in mind, it benefits. The OS can still assign different programs to different processors, meaning that program A can run on one G4 while program B toils away on the other. Also, programs are always working in conjunction with the OS and, since Mac OS X will be multiprocessor-savvy, it will balance of its own work (such as moving windows and scrolling) across processors.

## Memory matters

Your base Mac ships with at least 64MB of memory (RAM). The higher-end models do ship with more – for instance, the iMac DV Special Edition, 500MHz PowerBook and 500MHz G4 Cube each has 128MB installed. The 500MHz Power Mac has 256MB of RAM. You might have to add more RAM, so these models save cash.

With software applications ever more demanding, even 64MB of RAM is a little light these days. 128MB is a far better amount to start with, so choose a Mac with as much memory as possible, or add more straight away. An extra 64MB should cost about £90, another 128MB is around £150, and adding 256MB more memory will set you back about £300.

Adding memory means installing small cards known as Dual Inline Memory Modules (DIMMs). Today's Macs are very easy to take apart to add these DIMMs. The iMacs have a neat door at the back; PowerBooks and iBooks keep theirs under the detachable keyboard; and Power Macs have a simple door on one side. Installing RAM is simple, but get your reseller to add it when you buy the Mac to save you the effort.

Ask your Mac reseller how much adding more RAM will cost, as prices can change by the day. Some will charge you for installing the DIMMs – so if you're happy doing it yourself, save yourself some cash. You can buy extra RAM as a build-to-order option from the online AppleStore if that's where you buy your machine, but you'll pay a premium for the privilege. Better to shop via the Web or mail order, if you're comfortable installing it yourself, or to buy from a local reseller and have them install it.

iMac owners can cope with 64MB of RAM, but will appreciate the speed-up offered by 128MB. Mac OS 9 takes up quite a chunk of this memory, and having more RAM means you can open more applications at the same time. Creative professionals will want at least 256MB. Some will say that anything short of 512MB is a girly-man's machine, but they're probably over-compensating for something not computer related.

You can allocate 50MB to Photoshop, 30MB to QuarkXPress, and 30MB to FreeHand or Illustrator – a good working situation for most days. Dreamweaver and Fireworks should get 50MB, and give Flash 70MB. (Make the default "suggested" memory size my minimum size.) Unless you're crossing party lines and keeping Photoshop open when you're working in Fireworks, or Illustrator open with FreeHand, you should be okay. That still leaves you with enough RAM to get on the Net and check your email for more work.

Andrew Shalet contributed to this article.

## Tower treats

The Power Mac G4/500 comes standard with a DVD-RAM drive that can record DVDs using the newest 4.7GB DVD-RAM media. This drive is also available as an add-on to the other Power Macs for an additional £220.

Even the Power Mac's back is impressive, sporting two USB and two high-speed FireWire ports. Its networking has been improved too, with the addition of Gigabit Ethernet. Apple's pro machine is the only workstation with this 1,000BaseT ethernet pre-installed. It would cost you at least £600 to add this functionality to a Windows PC. But note that this potential network-speed increase will be of limited benefit until the price of Gigabit Ethernet hubs falls. See the "Networking" box-out for more details.

Also, hidden round the back of the Power Mac is its new display connector. The new G4s and the G4 Cube are the first models to include the Apple Display Connector (ADC), Apple's modified DVI (Digital Visual Interface) connector, which adds power and a USB signal to the monitor cable. But fear not – the G4's built-in ATI Rage 128 card also has a standard VGA connector, so you won't need to spring for a new monitor. (See "Display" box-out on page 84.)

## Finding the answer

Intel and its competitors are releasing chips with speeds measured in GHz not MHz. The clock-speed of the PowerPC has lagged behind, and though Apple and Motorola are loath to admit it, these dual-processor Power Macs were created because faster G4 chips weren't ready.

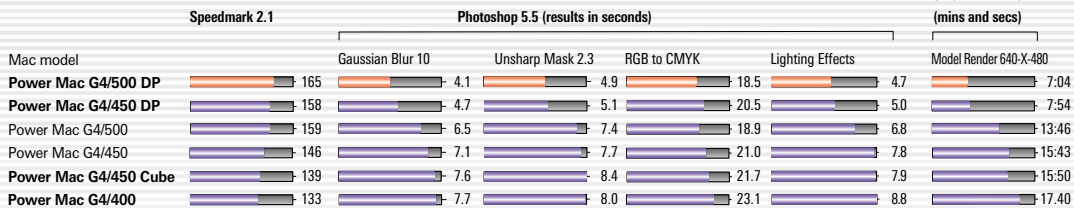
Adding second processors to Power Macs is a way for Apple to boost speeds without cranking up the MHz – and if you're using a multiprocessor-enabled application, you'll get major speed boosts from this pair of chips. Otherwise, these new Power Macs won't run much faster than their predecessors... until Mac OS X arrives, that is. Then, the power of the dual-processor Power Mac G4 will multiply, and Apple's multiprocessor maths should finally add up.

Simon Jary, Stephan Somogyi and Kristina De Nike

▶ page 92

## Minitower and Cube: G4 Power Macs speed tested

Best results in test.



Speedmark scores: longer bars are better.

Photoshop and Cinema 4D XL scores: shorter bars are better.

Speedmark 2.1 scores are relative to those of an iMac 350MHz, which is assigned a score of 100 for each test. Photoshop results are in seconds. Cinema 4D XL results are in minutes:seconds.

We tested each system with Mac OS 9.0.4, a default system disk cache, and virtual memory disabled for all application tests. We set displays to 1,024-x-768-pixel resolution and 24-bit colour. For Photoshop, we used 256MB RAM for all systems. For Photoshop's tasks, we used a 50MB file. We set Photoshop's memory partition to 150MB and History to Minimum. We allocated 80MB of memory to Cinema 4D XL. We rendered a model at a resolution of 680-x-480 pixels with oversampling set to 4 by 4.



# Which Mac laptop: iBook or PowerBook



A laptop is more than a computer. It's a loyal companion, an indispensable assistant, a home-entertainment system, and a gateway to the world. You can use your portable computer as easily on the road as you can at the office or at home. The only thing holding it back is a single wire leading from the back of the portable to a phone or ethernet jack – and even that's not true any more, with Apple's AirPort wireless-networking technology leaving users free to roam their homes and offices.

If you require a Mac that's portable – or you just don't fancy a bubble-like iMac or imposing Power Mac taking up a large part of your desk – you must choose between consumer iBook and professional PowerBook. With the iBook recently revised (see *Macworld*, November 2000), there's less of a gap between the two portable Macs – but there's still some definite choices to be made.

## Features

The terms 'consumer' and 'professional' are kind of misleading when comparing iBook and PowerBook, as the feature set of each is now pretty close.

No one expects much from a consumer portable; mostly, we just want it to run some basic applications, deliver reasonable battery life, and not crash too often. By these measures, the new iBooks significantly exceed expectations. The PowerBook, though, still has compelling advantages for many users, with an uncompromising feature set.

**Display** The PowerBook wins here, with its 14.1-inch (diagonal) built-in TFT XGA active-matrix display supporting millions of colours at 1,024-x-768-pixel resolution. The iBook has a smaller, 12.1-inch (diagonal) TFT SVGA active-matrix display that supports millions of colours at 800-x-600-pixel resolution.

Most iMac users set their 15-inch displays to 800-x-600 pixels, so the iBook's 12-inch screen shouldn't be regarded as too small for serious work. The PowerBook's higher pixel resolution is also attainable on the iMac, so 14 inches can

be visually equated to 15 in this case. While the makers of some cheap PC notebooks are opting for 13-inch passive-matrix displays, we're happy to see Apple sticking with 12 inches and the clarity of active matrix for the iBook. At least until Apple can find a way to offer 14-inch displays that reasonably support higher resolutions for under £1,500, we see no point in abandoning the iBook's 12-inch screen.

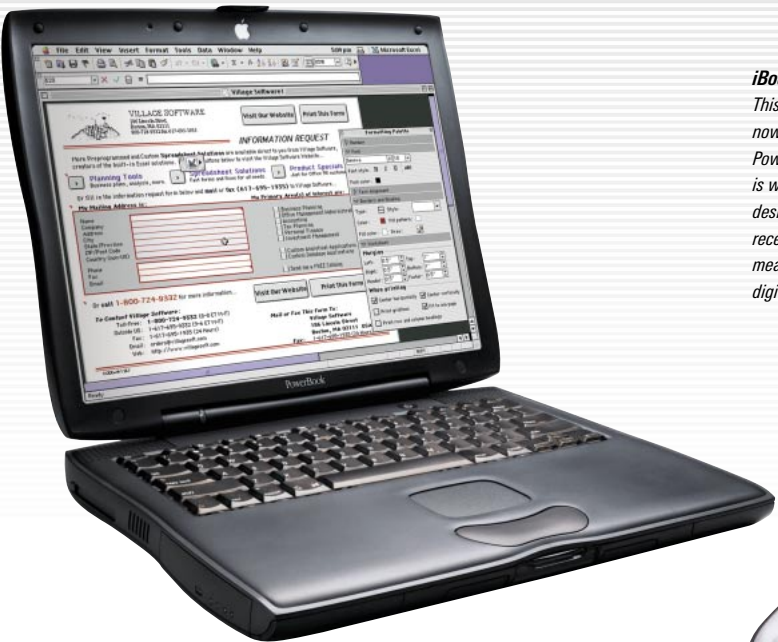
Apple's displays are sharp, so it's a matter of size rather than quality – both laptops pack an ATI Rage Mobility 128 graphics accelerator with 8MB of SDRAM graphics memory and AGP 2X support. The PowerBook also has dual-display capability, as well as video mirroring on an external monitor or video projector.

**Connections** While AirPort's wireless technology offers the greatest impact for portable users, it's not the only important capability in Apple's portables. The PowerBook has two FireWire ports on its back panel, and the iBook now has one on its side. Portables are the ideal home for FireWire – who better than mobile users (especially professionals) to take advantage of tiny, light, hot-swappable hard drives that don't require separate power sources?

Then there's the matter of being able to directly download video from a FireWire-equipped DV camera to the PowerBook or iBook. Apple includes its marvellous iMovie 2 video-editing software free with both iBook and PowerBook (as well as its Power Mac, Cube and all-but-one iMac). See the "FireWire and iMovie 2" box-out on page 83.

The iBook also has one 12-Mbps USB port for adding a printer, scanner, digital-camera card reader or other peripheral. The PowerBook has two, which is handy if you want to attach more than one hardware add-on. iBook owners will need to buy a USB hub to catch up – a four-port USB hub costs about £35. iBook and PowerBook are equal on networking, with both offering 10/100BaseT ethernet.

**Video-out** If you want to get your digital movies onto videotape or just showing on the telly, your portable options do differ. The PowerBook has an S-video port for



## PowerBook

This professional Mac laptop boasts more features and a larger screen than the iBook, but has been caught up by the consumer portable. If you're often on the move, consider a PowerBook as your principal computer.

## iBook

This consumer Mac laptop now boasts many of the PowerBook's features, and is way ahead on many case-design attractions. The recent addition of FireWire means you can even make digital movies on it.



top-quality TV pictures, but check that your telly itself has an S-video port. The iBook has composite video-out via a clever cable adaptor that plugs into the headphone jack. S-video offers better quality video, but the iBook's video-out should be fine for most iMovie productions. If your telly or VCR doesn't have S-video, it will more than likely hook up to an iBook.

**Storage** The iBooks have the same hard-disk capacity as the entry-level PowerBook. 10GB will be plenty for most users, as long as they regularly archive their digital movies to CD or FireWire hard drive. The PowerBooks can also be equipped with 20GB and 30GB drives. FireWire hard drives can be attached to both laptops; and the PowerBook can take an extra hard drive in its spare expansion bay.

**Expansion** This is where the PowerBook seems to win hands-down over the iBook. The pro laptop has a hot-pluggable expansion bay that can accommodate a CD or DVD drive, a Zip removable drive, or a hard drive. The PowerBook can also support one Type I or Type II PC Card or CardBus card. Use this slot for adding ISDN functionality via Hermstedt's £350 Marco card.

But the iBook's FireWire and USB ports can handle most of these tasks, and most PowerBook owners will want to keep their DVD drives active anyway. So the expansion gap has narrowed somewhat.

**Memory** The iBook ships with 64MB of RAM, and has a single DIMM slot that supports up to a further 256MB for a total of 320MB of memory. The PowerBook ships with either 64MB or 128MB of RAM, with two DIMM slots supporting up to a total of 512MB of memory. The

PowerBook is therefore more flexible, although the iBook's maximum is impressive enough.

**CD or DVD** The future is definitely DVD and not CD, but this future is still some way off. You can use your iBook or PowerBook to show DVD movies on screen (good for long plane journeys) or through your telly, but a £200 DVD player is better for the home. For the great majority of computer titles and programs, CD is all you really need. So, go for DVD if you can afford it, but don't be too despondent if you miss out right now.

## Design differences

One big difference between the two Apple laptops is case design. The PowerBook is sleek and sexy portable, but looks pretty much like every other laptop. The iBook looks like no other laptop, and it's not all fancy styling.

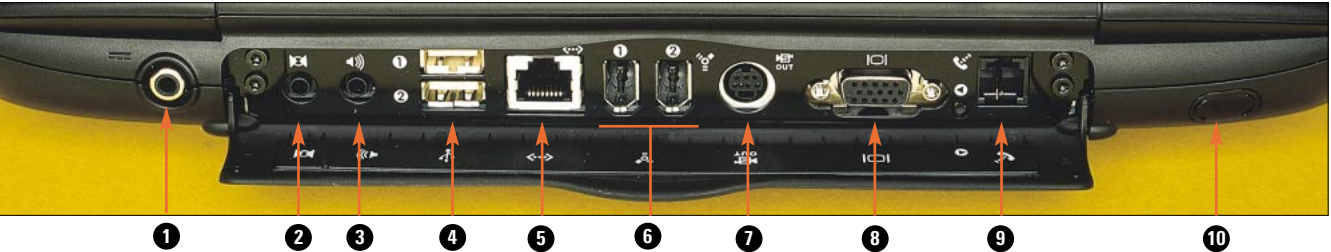
The iBook might look like a softie, but its shell is specially hardened, with co-moulded rubber bumpers to further protect its innards. The PowerBook is tough, but the

## iBook ports

Even the entry-level iBook (below, top) boasts pro-level functionality, with modem (1), 10/100BaseT ethernet (2), USB port (3), FireWire port (4), and AV port (5).

## PowerBook ports

The PowerBook's back panel (below, bottom) reveals its professional side, with power (1), audio in-port (2), audio-out port (3), two USB ports (4), 10/100BaseT ethernet (5), two FireWire ports (6), S-Video out (7), VGA out (8), 56Kbps modem (9), 4Mbps IrDA infrared (10).



## Apple's current portable Mac range

Model	PowerPC processor	Base RAM	Max RAM	Hard disk	CD-ROM DVD	USB ports	FireWire ports	AirPort	Ethernet	iMovie 2 software	56Kbps modem	Graphics card	Screen type and size	Colours
iBook	366MHz G3	64MB	320MB	10GB	CD	1	1	Yes	10/100	Yes	Yes	8MB ATI Rage Mobility 128	12.1-inch active-matrix; 800-x-600 **	Indigo, Key Lime ***
iBook SE	466MHz G3	64MB	320MB	10GB	DVD	1	1	Yes	10/100	Yes	Yes	8MB ATI Rage Mobility 128	12.1-inch active-matrix; 800-x-600 **	Graphite, Key Lime ***
PowerBook 400	400MHz G3	64MB	512MB	10GB	DVD	2	2	Yes	10/100	Yes	Yes	8MB ATI Rage Mobility 128	14.1-inch active-matrix; 1,024-x-768 **	Black
PowerBook 500	500MHz G3	128MB	512MB	20GB *	DVD	2	2	Yes	10/100	Yes	Yes	8MB ATI Rage Mobility 128	14.1-inch active-matrix; 1,024-x-768 **	Black

■ All iBooks ship with Mac OS 9.04, AppleWorks 6, QuickTime 4, Microsoft Internet Explorer and Outlook Express, Netscape Communicator, Bugdom, Nanosaur, Palm Desktop Organizer, FAXstf Pro, Adobe Acrobat Reader.

■ All PowerBooks ship with Mac OS 9.04, QuickTime 4, Microsoft Internet Explorer and Outlook Express, Netscape Communicator, Palm Desktop, FAXstf Pro, and Adobe Acrobat Reader.

■ AirPort card and Base Station available for an extra £319 (inc. VAT). AirPort allows you to access the Internet without attaching the modem cable to your Mac, as well as network Macs wirelessly.

\* 30GB option available on online AppleStore.

\*\* Screen size measured in pixels.

\*\*\* Key Lime colour currently available on online AppleStore only.



## Networking options

All Macs – desktop and portable – come with at least 10/100BaseT ethernet networking. This is the fastest networking standard that is common in all computing environments. Faster still is 1000BaseT ethernet, also known as Gigabit Ethernet, which is available on the two multiprocessing G4 Power Macs and as an option on the G4 Cube.

Data transfer rates on a 10BaseT network are theoretically 10 million bits per second (10Mbps), 100Mbps on a 100BaseT network, and 1,000Mbps on Gigabit Ethernet. This should mean that 1000BaseT is 100 times as fast as 10BaseT. In practice, however, Macworld Test Centre trials show that 100BaseT is twice as fast as 10BaseT, with 1000BaseT just three times faster than 10BaseT. These are still impressive boosts for heavily used networks that frequently handle large 50MB+ files – but remember that you need to buy the relevant hub, switch and cable for the faster speeds.

All the current Macs – except the entry-level £649 iMac – can also take advantage of Apple's AirPort wireless-networking technology. With an AirPort Card installed, and Base Station connected to your ethernet network and/or modem port, you can browse the Web and share files with other Macs on your network up to 150 feet away from the Base Station.

iBook is built to withstand a punishing kid's lifestyle. The lack of a latch also protects the iBook's casing; Apple instead uses a simple but firm spring-loaded case top. Many PowerBook owners are also jealous of the iBook's handle, which makes carrying the laptop without a bag a hell of a lot easier. Apart from these factors, it comes down to personal taste. You might love the iBook's handle, but could you walk into a business meeting with a shocking lime-green portable. The Graphite iBook is certainly easier on the eye than the Indigo and Key Lime iBooks, but is available for the SE model only. The PowerBook's black polycarbonate skin is the more sober option; but the Key Lime models' plastics even glow under a black light.

Both laptops have a full-size keyboard and top-quality trackpad. If you use either at your desk for long periods of time, you should consider buying a mouse (maybe Apple's new £45 optical Pro Mouse) to save your finger the effort.

## Performance

**Speed** Because the G4 is still too power-hungry to make a good processor for a portable, the iBook and PowerBook both feature a PowerPC G3 processor. The high-end PowerBook configuration clocks in at 500MHz; the entry-

level model at 400MHz. Better yet, Apple has surrounded the PowerBook's speedy G3s with state-of-the-art G4 logic boards, including a 100MHz memory bus. The iBook's memory bus remains at 66MHz. This makes the PowerBook's RAM slightly faster, but iBook owners won't notice the difference.

When *Macworld* reviewed the first iBook, we had many complaints, almost all of which Apple has addressed with this latest generation of iBooks. Chief among those complaints was performance. We're happy to report that the new iBooks are much speedier than their predecessors, thanks to two key improvements: 256KB of Level 2 cache built into the G3 processor, and a state-of-the-art ATI Rage Mobility 128 chipset in place of the poky 2D and 3D graphics controller earlier versions shipped with. Don't underestimate the importance of the new Rage controller: the iBook is the sweetheart of school-age children everywhere, and we all know how much today's games push the envelope on graphics performance. (We're sure it'll help out with maths homework, too.)

When we ran the new models through their paces, both iBooks performed much faster than previous generations, and the SE was even faster when running Quake and SoundJam. The entry-level iBook runs a 366MHz G3, the iBook SE a 466MHz G3. Although Macworld Lab tests show the SE iBook to be 11 per cent faster than the 366MHz model, most iBookers won't notice a great deal of difference. The entry-level PowerBook is just 6.5 per cent faster than the entry-level iBook – but costs £636 (excluding VAT) more. The iBook SE is 5 per cent faster than the 400MHz PowerBook, and £424 cheaper.

Although Apple won't comment on future products, it seems reasonable to expect G4-based PowerBooks (initially from 400MHz to 500MHz) next year.

**Battery life** Our biggest surprise when testing the new PowerBooks wasn't speed results but battery life. You would expect battery life to go down as performance goes up. Not so with the PowerBooks, which actually offered improved battery life over their predecessors. And iBooks continue to surpass PowerBooks in battery life: the units we tested delivered about three and a half hours of use with moderate power-saving measures, compared with the PowerBook's average of two hours per battery.

## Weight problem

The iBook's mainly white casing and PowerBook's svelte looks hide the fact that both are in need of a diet. At nearly seven pounds, the iBook SE is a hefty load. Even the iBook without DVD weighs more than six and a half pounds – about a half-pound heavier than the PowerBook. The iBook's handle makes this less of a problem, but we'd love Apple to address this weight problem next time around.

## Macworld's buying advice

Apple's PowerBooks and iBooks – with their speedy G3s, fast ATI graphics controllers, sizable hard drives, FireWire ports, and active-matrix screens – are incredible value. The iBook SE, in fact, may just be the best value of Apple's portable line, and perhaps of any notebook, Mac or otherwise. And who else but Apple gives you a computer that glows under a black light?

Previously, we've always said that PowerBook is best. Now the pro laptop has been caught by Apple's own (so-called) "consumer" iBook. For ultimate performance and screen size, the 500MHz PowerBook can't be beat. But if you need a portable and you're on a budget, the iBook is sure tempting – it delivers value not even consumer PC notebooks can match. But the best value in Apple's portable line is the 466MHz iBook SE, with performance comparable to a PowerBook's for £500 less.

**Andrew Gore and Simon Jary**

## Portable Macs speed tested

Best results in test.

Mac model	Speedmark 2.1	Quake III	SoundJam 2.5.1
<b>iBook SE G3/466MHz</b>	104	22	3.25
<b>PowerBook G3/400MHz</b>	99	23	3.18
<b>iBook G3/366MHz</b>	93	19	4.13
iBook G3/300MHz (1999)	68	4	4.36
<b>iMac G3/350</b>	100	22	4.36

Speedmark 2.1 scores are relative to an iMac 350MHz (1999), which is assigned a score of 100. SoundJam scores are in minutes and seconds. Quake results are in frames per second.

We tested each system with Mac OS 9.0.4, 64MB of RAM, and a default system disk cache of 2MB. We set displays to 800-x-600 pixels (1,024-x-768 for the PowerBook), and 24-bit colour. We tested MP3 encoding with an audio-CD track that was 9 minutes and 25 seconds long, and converted it using a default setting of 128Kbps in SoundJam. Speedmark is a suite of common tasks. Currently available models in **bold**. Apple could not supply 500MHz PowerBook for testing – we can estimate a Speedmark score of between 110 and 115.



# Battle of the bandwidths

Modem, ISDN or ADSL? Your Internet-access options have never been wider.

By David Fanning

PHOTOGRAPHY: MIKE LANE

**M**odems have always been the primary way of connecting to the Internet for the home user. Ten years ago, however, modem owners were at the cutting edge of communications and were probably considered freaks and nerds. Now, though, if you lack access to the Internet you're considered to be technologically underprivileged; modems have become commonplace technology. Here, we take a look at today's Net-connection options.

In 20 years, modems have evolved from acoustic-coupler modems – via which you attached your telephone handset to the modem – capable of from 300 bits per second (bps) to 56Kbps. Beyond the modem, digital-communications methods, such as ISDN and ADSL, have taken transfer rates to new heights. The latest technology, ADSL (Asymmetric Digital Subscriber Line) is in its infancy and its mettle remains untested. Much of the UK's telephone system is now mostly digital, yet the short hop from your

page 98 ▶

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breakdown	<h3>Billion USB ISDN TA</h3> <p>A terminal adaptor needs certain things to work on a Mac – software drivers being one of them. The Billion TA arrived in our offices with the Mac drivers supplied on a floppy disc, a clue that Billion is not the most Mac-savvy company. On the Billion Electric Co Web site the Mac drivers are downloadable in beta form only. At least the drivers that I loaded – presumably the same as the betas – did work.</p> <p><b>Macworld's buying advice</b> There's no good reason for buying a product that's unfinished, except to save money. If you're short of cash and want ISDN, this is the model to go for. I'd rather be patient and wait for the Hermstedt equivalent, though.</p>	<h3>Hermstedt Leonardo USB</h3> <p>Most professional ISDN use involves peer-to-peer file transfers. For that you need the Leonardo USB. Previously, the Leonardo was a PCI card, but now there's also an external version that uses USB. The Leonardo USB comes with Leonardo Express software, which is fine for simple file-transfers to other ISDN users. To get the most from the Leonardo, it's a good idea to get Grand Central Pro 2.0. It does cost £269 extra, but this software helps get the most out of the available features.</p> <p><b>Macworld's buying advice</b> The internal version of the Leonardo remains available, but is £100 more expensive. If you're a heavy user of ISDN, why not consider the 30-channel Angelo card, which is surprisingly affordable.</p>	<h3>Hermstedt Marco ISDN PC Card</h3> <p>The Marco is an ISDN card for portable computers, and its biggest group of users are press photographers. It's a PC card that fits into a PowerBook and enables snappers to get high-res images speedily to newspaper photo-desks. Trouble is, apart from high-tech press rooms at sports arenas, you'd be lucky to find an ISDN-equipped site to use. However, at least Marco does what it says, and there's a choice of the basic card for £350, or a £645 package that includes Grand Central Pro.</p> <p><b>Macworld's buying advice</b> The Marco services a specialist market, outside of which its use will be limited by a lack of ISDN connections in hotels and workplaces.</p>	<h3>Multitech Multimodem USB</h3> <p>The Multitech is thin on features and is housed in a translucent Blueberry case. Doesn't Mutitech know that, because modern Macs have built-in modems, the market for this kind of product has all but disappeared? It's not as if iMac users will want to replace their in-built modem on a colour whim. On the feature front, it has fax software that works well and, being a USB modem, doesn't need a power supply. Beyond this, it's unexciting.</p> <p><b>Macworld's buying advice</b> Unless your Mac lacks an internal modem, or it's simply died, there's little reason for buying this model. However, it does work well enough and has the basic features a modem needs – but is too pricey for what it offers.</p>	<h3>Swann USB Modem</h3> <p>This no-frills modem comes in a soap bar-sized translucent case. Its modem scripts install and work easily enough. The Swann has no fax capability, no caller ID, and no voice mail – but at least this is reflected in the price. As with the Multitech Modem, being translucent is, at best, a curious marketing ploy because it's aimed at users of Macs with built-in modems.</p> <p><b>Macworld's buying advice</b> As with Multitech's modem, consider the Swann an option only if your internal modem packs up. The only other reason to go for an external modem is for extra features and, because this has none, it further hinders its appeal in the Mac market.</p>																																																		
specs	<table><tr><td>Company</td><td>Billion</td></tr><tr><td>Price</td><td>£99</td></tr><tr><td>Telephone</td><td>Edge Vivicom 0118 965 7743</td></tr><tr><td>URL</td><td>www.billion.tw</td></tr><tr><td>Star Rating</td><td>★★★/6.2</td></tr></table>	Company	Billion	Price	£99	Telephone	Edge Vivicom 0118 965 7743	URL	www.billion.tw	Star Rating	★★★/6.2	<table><tr><td>Company</td><td>Hermstedt</td></tr><tr><td>Price</td><td>2/1 channel, £699; 4/1 channel, £799; 4/4 channel, £899</td></tr><tr><td>Telephone</td><td>020 7421 1500</td></tr><tr><td>URL</td><td>www.hermstedt.co.uk</td></tr><tr><td>Star Rating</td><td>★★★★/8.5</td></tr></table>	Company	Hermstedt	Price	2/1 channel, £699; 4/1 channel, £799; 4/4 channel, £899	Telephone	020 7421 1500	URL	www.hermstedt.co.uk	Star Rating	★★★★/8.5	<table><tr><td>Company</td><td>Hermstedt</td></tr><tr><td>Price</td><td>£350, £645 (with Grand Central Pro)</td></tr><tr><td>Telephone</td><td>020 7421 1500</td></tr><tr><td>URL</td><td>www.hermstedt.co.uk</td></tr><tr><td>Star Rating</td><td>★★★★/7.5</td></tr></table>	Company	Hermstedt	Price	£350, £645 (with Grand Central Pro)	Telephone	020 7421 1500	URL	www.hermstedt.co.uk	Star Rating	★★★★/7.5	<table><tr><td>Company</td><td>Multitech</td></tr><tr><td>Price</td><td>£149</td></tr><tr><td>Telephone</td><td>0118 959 7774</td></tr><tr><td>URL</td><td>www.multitech.com</td></tr><tr><td>Star Rating</td><td>★★★/6.6</td></tr></table>	Company	Multitech	Price	£149	Telephone	0118 959 7774	URL	www.multitech.com	Star Rating	★★★/6.6	<table><tr><td>Company</td><td>Swann</td></tr><tr><td>Price</td><td>£99</td></tr><tr><td>Telephone</td><td>Computer Umlimited 020 8358 5857</td></tr><tr><td>URL</td><td>www.swann-europe.com</td></tr><tr><td>Star Rating</td><td>★★★/6.9</td></tr></table>	Company	Swann	Price	£99	Telephone	Computer Umlimited 020 8358 5857	URL	www.swann-europe.com	Star Rating	★★★/6.9
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street's junction box to your phone wall-socket is still analogue. Because your computer's outgoing signals are digital, the modem has to turn these into analogue. These remain analogue only as far as the junction box, after which they zip across BT's digital network and remain digital to your ISP (Internet Service Provider).

So why does the digital network go only to the corner of your street? Well, you can get BT to make the analogue bit digital, but this wholly digital connection is called ISDN (Integrated Services Digital Network); the consumer version of this is called Home Highway, and costs more than a normal telephone line.

The customer is footing the bill for BT's completion of the digital network through extra line rental. Forward-looking countries such as Germany saw the benefit of a completely digital network years ago, and actually gives a discount to those using ISDN.

Because they relay analogue signals, the fastest a modem can go is 33.6Kbps –

the physical limitation of analogue lines. However, most modems now claim a speed of 56Kbps. This is possible only when connecting to an ISP, because the signal becomes digital only after you get past the end of your street. Before the Internet took off, modems were used to transfer files between individuals, meaning there were analogue connections at each end of the line. A 56Kbps modem cheats, by using the digital bit of the line for fast downloads, but it still can't get the upload speed beyond 33.6Kbps. And anyway the 56Kbps speed is only a theoretical top speed – in reality, it depends on the line. I've never seen a 56Kbps modem connect at any faster than 50Kbps. This means a 56Kbps modem is the ultimate speed – unless you go digital.

The easiest way to take the digital option is to add an ISDN terminal adaptor, and subscribe to BT Highway. Completing the digital circuit means you connect at full speed every time. Full speed for ISDN is 64Kbps, in both directions. When you get

ISDN you also get dual-lines, so as long as your ISP supports it, you can use both these lines to connect to the Internet simultaneously, making a speed of 128Kbps possible. But don't forget, using both lines means double the telephone charges.

## ADSL

ADSL is touted as the solution to all our Internet connectivity problems, promising a high-speed, always-on Internet connection. It should signal an end to dialling-up the Internet, because it's always connected. ADSL may be the ultimate answer, but, in the short term, it remains on the fringes of mainstream connectivity. The main thing preventing ADSL reaching its full potential is BT, which has made its launch so low-key that few people know what ADSL is, never mind considering using it.

ADSL uses the existing copper cabling that connects your normal telephone line to hook-up to the Internet at speeds up to 2Mbps (about 2,000kbps). This requires

<b>56K</b>	56K Means 56Kbps (kilobits per second). The reality is that speed sits somewhere between 40Kbps and 50Kbps.
<b>V.90</b>	Protocol used for 56K communication. A V.90 modem is identical.
<b>ISDN</b>	Integrated Services Digital Network. A fast digital telephone-line that uses multiple channels for channel bundling.
<b>ADSL</b>	Asymmetric Digital Subscriber Line. Asymmetric because downloading is quicker than uploading.
<b>Channel bundling</b>	The use of more than one ISDN line to communicate with the same place. As many as 30 channels can be used simultaneously.

special equipment at telephone exchanges, meaning access is offered only to those who live in the right areas. These areas are mainly in the centre of large cities; out of town means out of luck. Also, there's a limit to the distance you can be from any ADSL-equipped exchange. Living more than two





design

## Zoom/FaxModem 56K USB

The Zoom modem may be a grey box, but at least it's a grey box that does its job well. It has a fax feature and – wait for it – ZoomGuard Lightning Protection. You may laugh, but when lightning strikes, it can send a huge power surge down your telephone line and destroy your modem. I know, because it happened to me in 1995 – and fried my £600 modem.

**Macworld's buying advice** This model lacks exciting features such as voicemail but is a good-value replacement for a busted internal modem.

Company	Zoom
Price	£68
Telephone	0870 720 0060
URL	www.zoom.com

**Star Rating** ★★★★★/7.1

## SpringPort Modem

The SpringPort Modem is designed for the HandSpring Visor, which runs the Palm OS. The modem comes with five pieces of software, three set-up utilities and two commercial packages. The size of the modem does add considerably to the Visor's bulk, because it houses three AAA batteries. If you use it without the batteries, this drains the Visor batteries instead.

**Macworld's buying advice** The SpringBoard Modem's functionality far outweighs its bulkiness because it keeps you in contact with the world when away from your Mac – not bad for £110.

Company	Xircom
Price	£110
Telephone	01256 332 552
URL	www.xircom.com

**Star Rating** ★★★★★/8.6

breakdown

specs

or three miles from an exchange means ADSL will be something that only others can enjoy. However, those Macintosh users lucky enough to use ADSL still face problems – using a Mac being the foremost of them.

PC users can sign-up for the consumer version of ADSL for £40 per month, with a £150 installation fee. That buys download speeds of 500Kbps, at least in theory – but

in practice, users may share that bandwidth with up to 49 others.

Mac fans, though, can connect only via ethernet, because no one has yet written drivers for the USB ADSL modem. By connecting via ethernet, you're considered to be a business user, and, of course, are required to pay business rates. Nice one, BT.

page 102

	Product	Max speed	Installation fee	Monthly rental
ADSL prices	Home 500	500Kbps	£150 (inc VAT)	£39.99 (inc VAT)
	Business 500	500Kbps	£150	£119
	Business 500PLUS	500Kbps	£260	£299
	Business 1000PLUS	1,000Kbps	£260	£389
	Business 2000PLUS	2,000Kbps	£260	£479
ISDN prices	BT Highway	128K	£175*	£27*
	*Discounted installation charges are available if a call-inclusive tariff is chosen.			
	Company	Channels	Installation fee	Monthly rental
Primary-rate prices	Cable London/Telewest	8	Free	£82
	BT	8	£1,000	£116
	Cable London/Telewest	16	Free	£164
	BT	16	£1,905	£232
	Cable London/Telewest	30	Free	£307
	BT	30	£2,325	£435

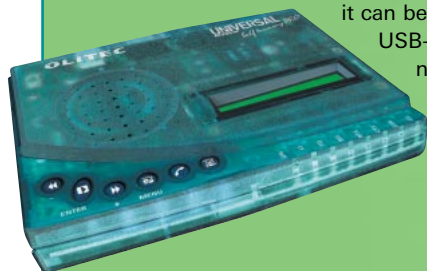
prices

Cable London/Telewest does not have countrywide coverage, and prices for installation for both BT and Cable London/Telewest are subject to survey. You can contact Cable London/Telewest on 0800 953 7777. Alternatively, speak to Hermstedt, who can arrange for installation with the purchase of an Angelo card from either BT or Cable London/Telewest.

## 56K modem: Olitec Universal Self Memory Pro

The feature-stuffed Olitec is the only modem on the market that could possibly tempt you to ditch your internal modem. Not only does it have a fax feature, but it can receive faxes without your Mac being turned on. When it is turned on it can then receive the fax from the modem. This gets around one of the most annoying things about fax modems in the past. Sure you get fax-machine capability, but you need to leave your Mac turned. The Olitec modem means you will save on electricity by just leaving the modem on.

**Macworld's buying advice** The Olitec has serial and USB connections, making it ideal for people using older Macs. This means it can be used on an old Mac. Then, when you get a USB-equipped model, it's still useful – even if your new Mac has a built-in modem.



Company	Olitec
Price	£75
Telephone	0800 028 4516
URL	<a href="http://www.olitec.com">www.olitec.com</a>

Star Rating ★★★★★/8.6

## ISDN: Hermstedt WebShuttle

The WebShuttle is a perfect example of how communications should be done. This is a product that, while working on a PC, is designed for the Mac from the ground up. The software goes beyond just drivers, giving a graphic view of file-transfer speeds from the WebShuttle control panel. The second channel can be easily switched on and off, or connected when using a single channel's available bandwidth. The casing is sleek, at least compared to its grey box-like rivals. Lights signal when it is connected, and with which channels. This is helpful if using the bandwidth-on-demand feature.

**Macworld's buying advice** If you want to connect to the Internet using ISDN, there's no better option than the WebShuttle. Even though it has been out for a couple of years, it still has little competition, because Hermstedt has concentrated on writing decent software. Other ISDN terminal-adaptor companies take note.



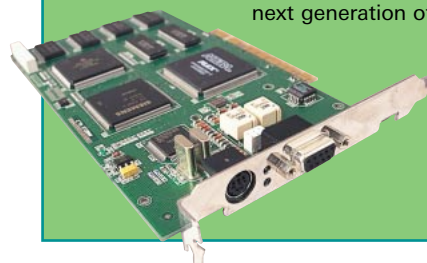
Company	Hermstedt
Price	£159
Telephone	020 7421 1500
URL	<a href="http://www.hermstedt.co.uk">www.hermstedt.co.uk</a>

Star Rating ★★★★★/9.0

## Primary Rate ISDN: Hermstedt Angelo card

The Angelo can connect using up to 30 channels of ISDN, for a transfer rate of 1,920Kbps – and that doesn't include built-in compression. Using Grand Central, you can use every channel individually to group-send files to different destinations. At £2,750 Angelo makes sense, even if you start by installing an eight-channel ISDN line. BT will install an eight-channel connection for £1,000, though it's worth checking if Cable London/Telewest are able to connect you. Coverage is patchy but if you're in the right area, Cable London will install up to a 30-channel connection for free. Cable London also undercuts BT on line rental. Check the chart on page 101 for installation charges and line rental.

**Macworld's buying advice** For a professional peer-to-peer connection, with spare channels for Internet access, the Angelo card is a must. It's the next generation of ISDN communications.



Company	Hermstedt
Price	£2,750
Telephone	020 7421 1500
URL	<a href="http://www.hermstedt.co.uk">www.hermstedt.co.uk</a>

Star Rating ★★★★★/9.0

The minimum you'll pay for ADSL on the Mac is £260 for installation and £100 per month (both ex. VAT). It's no wonder that ADSL isn't exciting Mac consumers. The one good thing about the ethernet-connected business option, though, is that you have to share your connection only with 19 others, not 49.

The reason lines are shared is because of hardware limitations at exchanges. In days of yore, party lines were used to share telephone services with neighbours. If a neighbour was on the phone, you had to wait until they were done before dialling – the only perk being listening-in on their conversation. ADSL uses a similar principal to share bandwidth, with the number of sharers known as a contention ratio. Consumer ADSL has a 50:1 contention ratio, and Business Plus ADSL has a 20:1 ratio.

Because ADSL is a nascent technology, you could find yourself being the only person in your exchange-area with ADSL. But as ADSL takes off, it may end up so clogged that you'd be better off with a 56K modem.

I hope BT will get its act together and provide better Mac support. However, if reports from the US are anything to go by, ADSL will be suitable only for home use.

## Macworld's buying advice

One plus with modems is that modern Macs come with one in-built. The internal 56K Mac modems are fine; though they can present a problem if they go wrong after your warranty has run out. Most of the modems we tested are fine as replacements for broken internal Mac modems – though only one, the Olitec Universal Self Memory Pro, has features beyond those offered by internal Mac-modems.

Budget is a key consideration with Net connectivity. If you already have a modem and your computing needs are unlikely to change then your best option is likely to be sticking with it. But if a faster option is needed, you'll have to spend some money, for ISDN – which will give you quicker dialling and more reliable connectivity. Remember that connecting with two channels means double the phone bill. However, if you connect with a single ISDN channel only, the speed improvement is less noticeable.

ADSL, meanwhile, becomes less attractive with each day. If you choose to pay the big premium for Mac connectivity with ADSL, you also have to make BT your ISP – an option I'm none too keen on. Deregulation should mean other companies will eventually offer ADSL. In the meantime it's best to wait and see.

As for professional peer-to-peer connectivity, this now benefits from Hermstedt's Angelo card, which offers 30-channel ISDN. A few years ago, firms were using dual-channel ISDN – and that was high-tech. Now, with an Angelo card, expect Primary Rate to take over from dual-channel ISDN for high-end file-transfers. MW



# Inside Mac OS X

It's going to take some solid practice getting used to the new ways of Mac OS X – out now as a public beta, and due in finished form “early next year”. *Macworld's* new monthly series is here to help.

## Menu mission

Mac OS X may introduce substantial changes to the Mac OS, but the Desktop menus for the most part follow the same structure as in the current Finder. The exceptions are the new **Application**, **Go** and **Window** menus. In this, the first of an ongoing series about new features in Mac OS X, we'll take an in-depth look at these additions, as well as other changes to the Desktop menus.



### Application menu

Combining elements of the Apple menu, File menu and Application Switcher, this menu sits on the far left of the menu bar, in the position currently occupied by the Apple menu.

Common to all native Mac OS X applications, it includes functions that apply to the entire program rather than a specific document, such as About (application), Preferences, and Quit.

By default, the title of the menu is the name of the current application. However, Desktop & Dock Preferences (a choice in the Desktop application menu) includes an option that displays the application's icon instead (much like the current Application Switcher).

The Desktop application menu, which appears when you are in the Desktop or Finder, provides access to System Preferences – Mac OS X's replacement for control panels (screenshot above) – along with Desktop & Dock Preferences.

The latter, in addition to letting you set such features as icon size and dock magnification, also provides access to Finder preferences, where you can determine whether folders open in a new window, as they do in the current Mac OS, or in the same window. The Application menu also includes



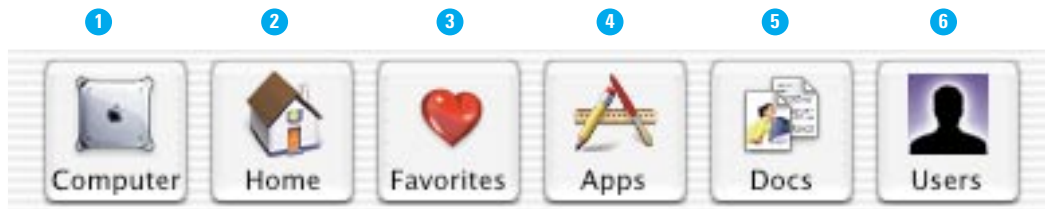
the log-out (⌘-Q) command. Mac OS X applications can make certain functions available to any client-program that wants to take advantage of them. These functions appear in a new Services submenu in the Application menu.

Each application that provides a service to the client app is listed in the Services submenu, with its available commands listed in a deeper submenu. When you select data and choose a command from the Services menu, the OS invokes the second program, which performs the operation.

For example, the HTMLedit application provides built-in access to Disk Copy's Mount Image feature and the Grab utility's Screen, Selection and Timed Screen capture functions.

The menu also includes the Hide and Show commands that reside in the current Application menu: Hide Application (now with a ⌘-H keyboard equivalent), Hide Others and Show All.

continues page 107 ▶



### Go menu

Sitting in the middle of the menu bar between the View and Special menus, the Go menu (above) is Mac OS X's closest approximation of the Apple menu. It provides access to the main folders – Computer (⌘-1), Home (⌘-2), Favorites (⌘-3), Applications (⌘-4), Documents (⌘-5) and Users (⌘-6) – as well as other recent folders, and also lets you connect to servers (⌘-K).

When you choose the command or use the keyboard equivalent, the associated folder opens in the Finder. You can also go to these areas using buttons in top portion of the Finder window (pictured above, top).

The current Mac OS encourages a modest amount of consistency by including dedicated folders for Documents, Applications, and Utilities. Mac OS X

takes this much further, by enforcing use of the main folders. For example, if you drag an application out of the Applications folder, Mac OS X makes a copy or an alias. Some users may chafe at the push for conformity – and it's possible that future tools will allow greater customization of the interface – but it's all part of an OS that accounts for the presence of multiple users, and one that seeks to be as accessible as possible to novices.

**Computer** (1) This area provides access to internal and external media, as well as servers you've connected to. It's a quick way to get to the highest accessible level of the system.

**Home** (2) Mac OS X assumes that you are sharing the system with others, so it provides the Home folder as a private area for individual users. Contained within are the Favorites and Documents folders, as well as individual system and application preferences.

**Favorites** (3) This folder – which resides inside the Home folder – provides quick access to frequently used applications, documents and other items. Because you can put any item you want in the folder (primarily aliases), this would appear to duplicate some of the capability of the Apple menu.

However, the Go menu does not recognize folder contents. If you put a folder or folder alias inside the Favorites folder, you can open the folder through the Go menu, but you can't drill down into enclosed files and nested folders. Also, the Go menu is not available systemwide – you must be in the Desktop to access it.

**Applications** (4) The home for applications (see screenshot, below left). If you drag an application to the desktop or another folder, Mac OS X either makes a copy, or, if you hold down the ⌘ and Option keys, makes an alias.

**Documents** (5) The home for documents, it resides within the Home folder.

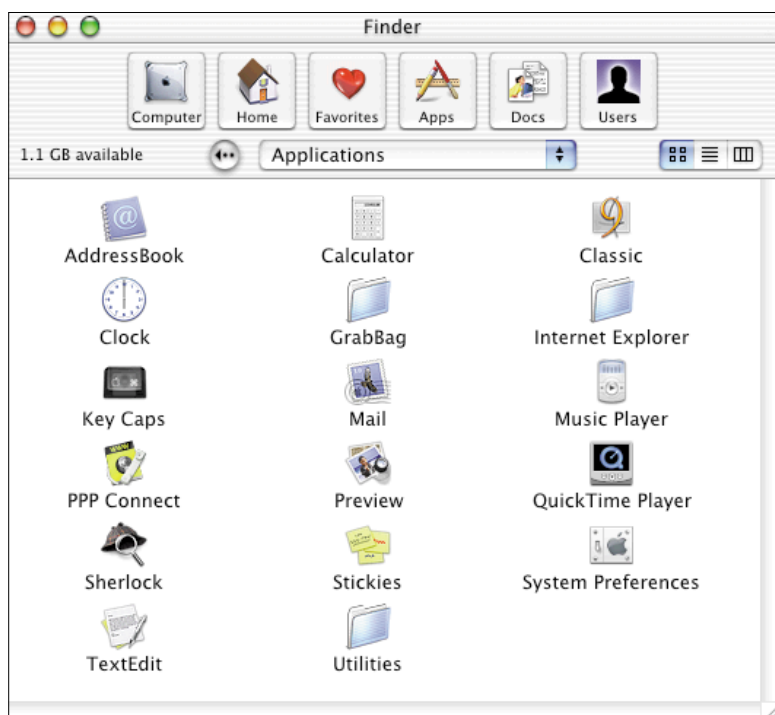
**Users** (6) This folder contains the Home folder for each user in the system.

The first command in the Go menu, Go to Folder... (⌘-~) is among the most un-Maclike in the Desktop. You might expect a file browser, but instead you get a dialogue that invites you to manually enter the directory path.

The Go menu's Recent Folders command, like the Recent Servers, Applications and Documents selections in the Apple menu, lists recently accessed folders – including main folders, which are also listed separately. As with the other commands in the Go menu, Recent Folders does not provide access to folder contents.

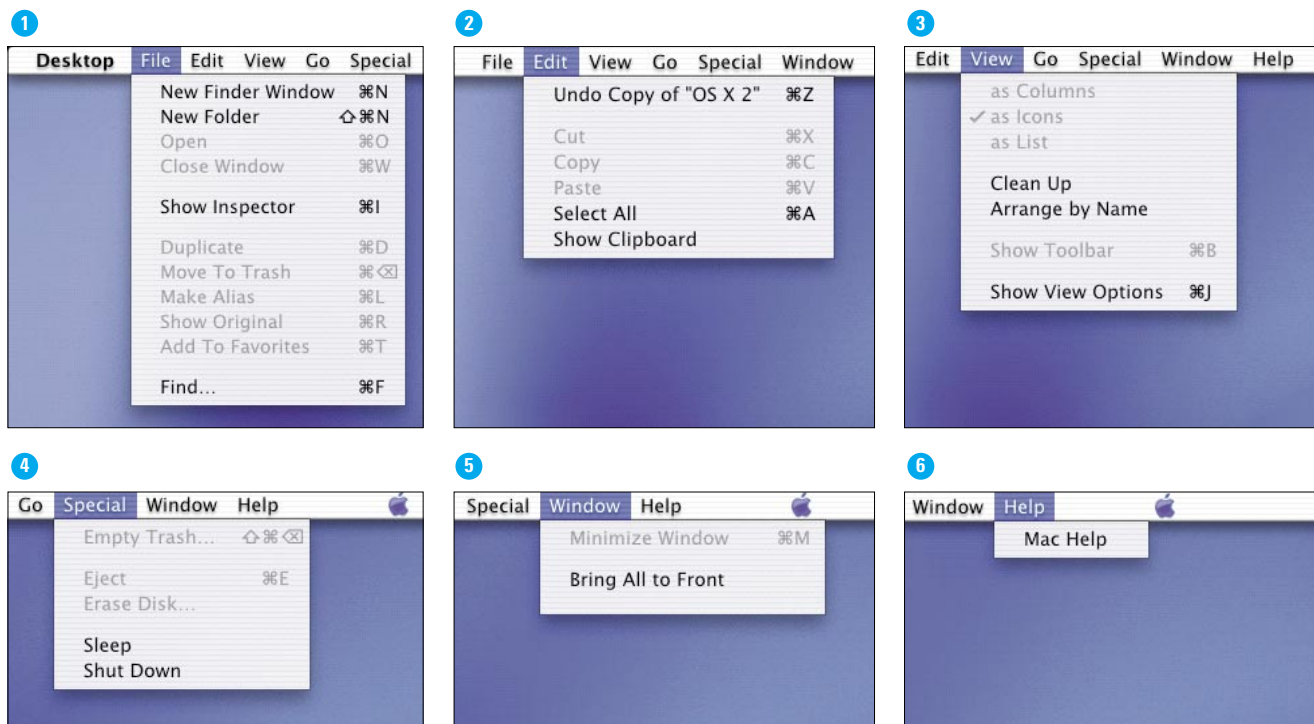
Finally, the Go menu includes a Connect to command (⌘-K) that lets you connect to servers. The dialogue box lets you enter a URL for the server or select from a pull-down list of AFP (AppleShare) and Web servers. The documentation notes that the public beta release cannot connect to AppleShare servers using AppleTalk – you must use TCP/IP.

One of the most controversial aspects of Mac OS X is its elimination of the Apple menu (except in the Classic environment). The Go menu provides many



continues page 108





of the functions previously offered by the Apple menu, and some readers have suggested that Apple could take it further by making it more customizable, allowing users to drill down into folder contents and providing it to all Mac applications.

### Other changes

The other Desktop menus – File (1), Edit (2), View (3) Special (4) and Help (6) – are largely carried over from the current Mac OS. However, there's a new Window menu (5) that includes Minimize Window and Bring all to Front commands (OS X allows for interleaving windows among different applications; the latter command brings all windows associated with the active application to the front). You can also go to any open windows using this menu. As well as the Desktop Window menu, Mac OS X provides for a Window menu in applications, as does OS 9.

The Undo function, accessed through the Edit menu, is much more capable than its predecessor. For example, you can undo file copy and renaming operations, which you cannot undo in the current Finder. The View menu includes a command that turns off the toolbar in the Finder Window.

Also noteworthy is the Inspector (File menu), which replaces the Get Info... function. The biggest change is that you can scroll through multiple files with the Inspector open and see their information.

If you click on a Carbonized application, the Inspector provides a checkbox option that forces it to open in Classic. Native Mac OS X applications are not allocated specific amounts of memory, so the memory option appears only when you inspect Classic applications.

When inspecting native applications, the Inspector provides an option that lets you view, add or remove resources contained in the application bundle. For example, the Music Player application includes localized resources for English, French, German, Italian, Japanese and Spanish, any of which can be removed using the Inspector.

The Inspector also provides a Sharing option that displays access privileges for the file – another sign of OS X's Unix underpinnings.

**Stephen Beale**

➔ MORE MACWORLD FEATURES ON MAC OS X:  
*Macworld*, November 2000: Beta Survival Guide  
 Next month: Mac OS X's new directories





# iMovie magic

iMovie 2 makes digital-video editing easy. By Jim Heid

Sometimes, the sequel surpasses the original. That definitely applies to iMovie 2, the latest version of the Apple software that has made digital-video editing easy for everyone. iMovie 2's star attractions include new editing capabilities, glitzy special effects and title styles, and a popcorn bucket full of tweaks and interface enhancements.

Despite these improvements, iMovie 2's

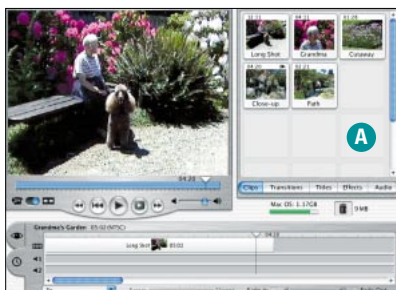
basic premise has not changed: Connect a DV camcorder to a Mac's FireWire port, and then use iMovie to bring video into your Mac, clicking on iMovie's buttons to stop, start, and rewind your camcorder. Next, use iMovie's editing features to organize and polish scenes, adding text titles and transitions as you go. Finally, transfer your finished epic back to

page 112

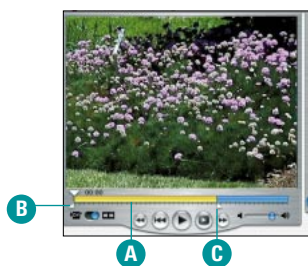
1

**Creating cutaway shots** A cutaway shot – where the camera angle changes to show, for example, a close-up of a garden as it's talked about – is a common video-production technique. One variation on this theme is a reaction shot, where the angle changes to show, say, an interviewer nodding

solemnly while an interviewee answers a question. iMovie's new Paste Over At Playhead command makes these edits easy to create. Begin planning reaction shots when you're shooting video footage. While you're filming the school play, grab a couple of shots of the audience. Or after you've shot an interview, move the camera to catch the interviewer nodding.



■ **Set up for the edit** With the footage shot, you're ready to set up for editing. First, make sure your primary and cutaway footage are separate clips (A). If your footage is just one large clip, split it up. Drag the clip to the timeline, position the playhead where you want to split the clip, and then press  $\text{⌘-T}$  or choose Split Video Clip At Playhead from the Edit menu. For cutaway shots, retain audio from the primary clip and discard audio from the cutaway. Choose Preferences from the Edit menu, click on the Advanced tab, and select the Extract Audio In Paste Over option.



■ **Crop your shot** The next step is to crop the cutaway shot. In iMovie's shelf, select the shot. Next, click beneath the clip's scrubber bar (A) to display crop markers. Drag the crop markers (B and C) left or right to indicate the bit of the clip you want. For extra precision, use keyboard shortcuts: to move a marker left or right one frame, press the left- or right-arrow keys; to move left or right ten frames, hit the shift key and the arrow key. Finally, choose Crop ( $\text{⌘-K}$ ) from the Edit menu.



■ **Insert the cutaway** Position iMovie's playhead at the desired point, and then paste the cutaway shot into position. First, position the primary footage – named "Grandma" in this example – in the timeline (A). Next, select the cropped cutaway shot – named "Cutaway" in this example – in the shelf (B) and choose Copy from the Edit menu. Now position the playhead (C) at the spot where you want the cutaway to occur. Finally, choose Paste Over At Playhead from the Advanced Menu.



## 2

### The curtain rises on iMovie 2

iMovie 2 Sports a revamped interface and new features aplenty. Here's a guided tour:

**A** The scrolling shelf holds more clips, making it easier to import video and plan your project.

**B** A collection of buttons takes the place of iMovie 1's animated drawer; when clicked on, these replace the shelf with controls for working with transitions, effects, titles, and soundtracks.

**C** The enhanced timeline now shows thumbnail versions of clips, and information about each clip – including its name and duration. The red bar below the clip at the far left edge of the timeline indicates that a title is currently rendering. iMovie 1's timeline lacked this useful feedback.

**D** You can zoom the timeline in, for detailed work, or out, to show all of your project.

**E** The Clip Speed slider lets you create slow- and fast-motion effects.

**F** With the new Lock Audio Clip At Playhead command, you can lock an audio clip to a specific video clip so



they remain synchronized, even if you insert additional clips before them. A small thumbtack icon denotes a locked clip.

**G** The main transport buttons have changed. The new buttons, from left to

right, are: Rewind, Home (go to the beginning of the project), Play (or, when it's playing, Stop), Play Full Screen, and Fast Forward.

**H** The new Advanced menu is the key to iMovie 2's improved audio-editing features.

videotape via FireWire, or export it as a QuickTime movie for the Web. Thanks to FireWire and the all-digital DV formats – such as Digital 8 – video quality remains consistent as you shuttle video from camcorder to Mac and then back to tape.

If you've used iMovie 1, iMovie 2 will feel familiar – though the differences may trip you up at first. If you're new to iMovie, see Reviews in September's *Macworld* for an in-depth look at iMovie 2. And in either case, keep reading for a hands-on guide to using iMovie 2's features and understanding its subtleties.

### iMovie 2 in store

Every new Mac with FireWire includes iMovie 2. If you have an older FireWire-equipped Mac, you can buy iMovie 2 for £35 from the Apple Store (<http://store.apple.com/uk>). The upgrade is available only as a download – Apple does not offer a CD-ROM version.

**Make the upgrade** If you buy the iMovie 2 download, you may have an afternoon's worth of updating to do before you can reliably run it. For starters, you'll need Mac OS 9.0.4 and QuickTime 4.1.2 – or later versions. These are the most recent as of press time. And, if yours is an older FireWire-equipped Mac, such as a blue- & white G3, you may have to install firmware and FireWire updates, too. For links to all the latest updates, visit [www.macworld.co.uk/updates](http://www.macworld.co.uk/updates).

**Get the latest** Shortly after releasing iMovie 2, Apple issued an update; you can download version 2.0.1. Also download the free iMovie 2 Plug-in Pack, which adds effects and title styles. While you're online, stop at

[www.apple.com/imovie/freestuff](http://www.apple.com/imovie/freestuff) to find music clips, sound effects, and graphics to use as backgrounds for titles.

Most of iMovie 2's interface and feature enhancements make editing more convenient.

**The scrolling shelf** iMovie 2's shelf – that grid of boxes where imported clips lie until you drag them to the Timeline Viewer area – introduces a radical new concept: a scroll bar. No longer is the number of clips you can store limited by your Mac's screen-resolution setting (see "The curtain rises on iMovie 2", above). iMovie's bigger shelf makes it easier to manage all the clips that make up a complex project, and it postpones the need to free-up shelf space by dragging clips into the timeline.

**A bigger, better timeline** iMovie 1's Timeline Viewer depicted every video clip in a project as a tiny blue bar; to identify clips, you had to switch from Timeline Viewer to Clip Viewer mode.

In iMovie 2, each clip in the timeline sports a small thumbnail image. To make the timeline even more informative, choose Preferences from the Edit menu, click on the Views tab, and then check the Show More Details box. iMovie then displays the clip's file name and duration, and even shows where you've applied iMovie's new fast- or slow-motion effects.

The new Timeline zoom pop-up menu lets you control how much of your project appears in the timeline.

To see the entire project, choose the 1x setting. Similar to the old, non-zoomable timeline in iMovie 1, this setting is ideal for moving clips large distances. When you're working with lots of small clips, you might

## 3

### All the right connections

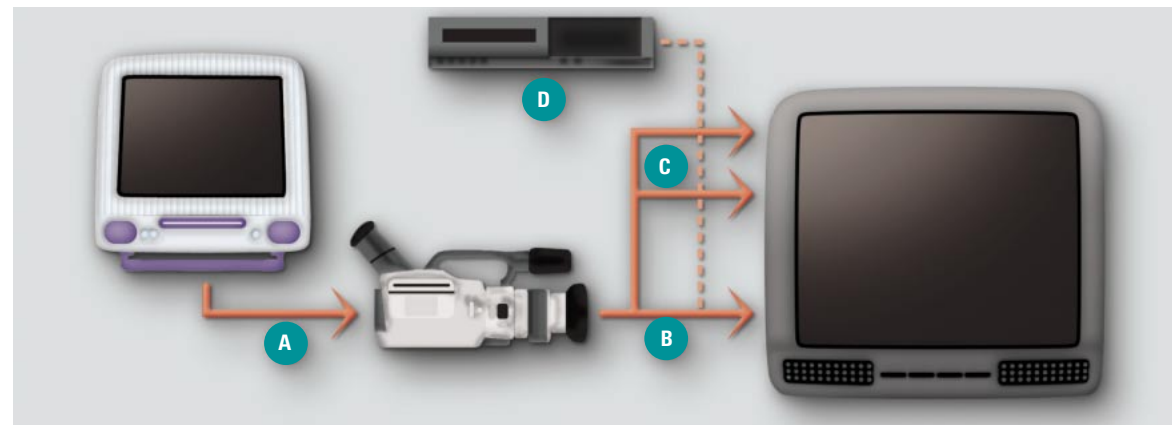
iMovie 2's Video Play Through To Camera option (under the Advanced tab in the Preferences dialogue box) lets you view your work on a TV as you edit – just like the pros. To activate this feature, connect your DV camcorder to the Mac with a FireWire cable (**A**) as usual. Then connect your camcorder's video output (**B**) to the video input of a TV set.

If your TV and your camcorder each have S-Video connections, you should use them for the best video-quality. If your TV lacks S-Video but has a composite video input – an RCA jack – use it. If your TV lacks video inputs, add an RF modulator between the camcorder and the TV set.

You can buy the modulator at Maplin for about £11.

When iMovie's Play Through To Camera option is selected, your project's audio will not play back through your Mac's speakers. You can rely on your camcorder's tiny, built-in speaker for sound playback, but you might want to connect your camcorder's audio outputs (**C**) to your TV's audio inputs – if it provides them – to a stereo system, or to a pair of external amplified speakers.

To make VHS dubs of your creative efforts, you can connect a videocassette recorder (**D**) between the camcorder and TV. Connect the camcorder's outputs to the VCR's inputs, and the VCR's outputs to the TV's inputs.



prefer a magnified view, such as 5x or 10x.

**From timeline to shelf** In iMovie 1, you could drag a clip from the Timeline Viewer area back to the shelf. In iMovie 2, you can't – you must first switch from Timeline Viewer to Clip Viewer mode. Here's a workaround: In the timeline, select the clip you want to move to the shelf, and then choose Cut from the Edit menu. Then select any clip on the shelf and choose Paste from the Edit menu.

**Editing like the pros** What a difference a check box makes. Activate iMovie's Play Through To Camera option (in the Preferences dialogue box), and anything you play – a single video clip, a title or transition, or your entire project – plays back not only on the Mac's screen, but also on your camcorder.

What's so hot about that? Simply this: the video that iMovie outputs to your camcorder plays at full resolution and motion – it isn't the preview-quality video iMovie displays on the Mac. Pop out your DV camcorder's LCD monitor, and you can use it to get a far more accurate assessment of the video.

But don't stop there – connect your camcorder's video output to a TV to view your work on a large screen (see "All the right connections"). This is how video professionals edit, and once you try it, you'll never settle for iMovie's preview-quality playback.

**Easier VHS dubs** There's one more benefit to the Play Through option: you can dub your finished projects to VHS or other formats without having to make a DV dub first. Connect your camcorder's outputs to a VHS deck's inputs, and then eject the tape from your DV camcorder. When you choose the Export

command, iMovie complains that there isn't a tape in the camcorder and asks if you want to continue anyway. Press your VHS deck's Record button and click on Export. Your DV camcorder acts as an intermediary, passing video and audio to the VHS deck.

With iMovie 2's editing features, you can add new layers of visual richness to your projects – and have fun in the process.

**Show the reaction** In iMovie 1, you couldn't switch to a second video clip while playing back the sound from the first one. This made it impossible to do cutaways and reaction shots, where the camera angle changes to show, say, an interviewer nodding while an interviewee answers a question.

### Paste haste

iMovie 2's new Paste Over At Playhead command makes these kinds of edits possible. See "Creating cutaway shots" for step-by-step details.

But not all the news is good. A flaw in iMovie 2 can create an audible pop, or delete part of a word at the cutaway point. Apple says this is because iMovie currently can't position audio with sub-frame accuracy. To work around this, time your cutaways to occur at brief pause points, such as between sentences.

**Stay still** iMovie 2's Create Still Clip command (in the Edit menu) creates a PICT file containing the currently displayed video frame. Here's one scenario where you might use it: you've made a movie of your boy scoring the game-winning goal, and you've got a great close-up of his smiling face as his team mates

page 114 ▶



hoist him up on their shoulders. If you create a still-image of that shot, you can place the still at the end of your movie and add closing credits to it. When played back, the action will freeze on Junior's happy mug as the credits roll.

**Make it slow** And what would a video of the kid's sports triumph be worth without slow-motion instant replays? iMovie 2 provides them. Just select the clip in the timeline, and then adjust the Clip Speed slider.

Because slowing down or speeding up a clip alters its audio playback, you'll want to mute the audio of a clip when you change its playback speed. With the clip selected, drag the Clip Volume slider to its far left position.

## Rendering

When you export a project containing slowed clips, iMovie displays a dialogue box advising you to render those clips for best quality and giving you the option to proceed with or without rendering. Choose the Render option, and iMovie performs additional processing that blends adjacent frames to smooth out the slow motion.

**Restore that clip** You've cropped a clip, but later need those extra seconds you took out. In iMovie 2, you can reclaim them, as long as you haven't chosen iMovie's Empty Trash command. Select the clip and choose Restore Clip Media from the Advanced menu.

Audio was a second-class citizen in iMovie 1, but iMovie 2's audio enhancements give you more control over soundtracks.

**Extracting audio** You may want to use only the audio portion of a clip – maybe you're making a documentary about your grandmother's childhood, and you'd like to show old photographs as she talks.

To do this, first place the video clip in the timeline, and then select the clip and choose Extract Audio (⌘-J) from the Advanced menu. iMovie copies the audio, places it in Audio Track 1, and then mutes the audio in the clip. Next, select the video clip in the timeline and press the delete key.

The video vanishes, but its audio remains behind, and you can now position stills and other clips in the video's place.

**The ghost of playheads future** Say you're working on your kid's birthday-party movie, and you want the sound of a windstorm to play as she blows out the candles. In iMovie 1, positioning audio at a precise point was a trial-&-error proposition. iMovie 2's ghost playhead makes it easy.

In the timeline, position iMovie's playhead at the spot where your daughter begins to huff. Now import your sound effect. As you drag it to the timeline, you'll see a semi-transparent version of the playhead at the point where puffing commences. That's the ghost playhead, and it's acting as a bookmark to save your place. Drag the sound effect to that spot.

**Fade control** In iMovie 1, you could make a clip's audio fade in or out, but the duration of the fade was fixed. In iMovie 2, you can double-click on a clip, and then adjust the sliders.

**Splitting audio clips** Unlike iMovie 1,

iMovie 2 enables you to split audio clips, dividing them into two or more separate clips whose position and volume you can adjust independently. You can use this feature to adjust a music soundtrack's volume levels. Say you want music to begin at full volume during your opening credits, become quieter when the action starts, and then return to full volume for the closing credits.

With the music track selected, position iMovie's playhead at the end of the opening credits and press ⌘-T. Next, move the playhead to the start of the closing credits and press ⌘-T again. This action splits the music track into three clips – select just the middle one and lower its volume slider.

iMovie 2's new Effects panel is the gateway to video effects ranging from subtle to silly. You can tweak clips shot under adverse lighting conditions using the Brightness/Contrast controls. The Adjust Colors tool fine-tunes colour balance – handy when you shoot under incandescent light and forget to adjust your camera's white balance.

## Colour effects

The Black-&-White effect, which strips away colour, can add a retro look to a clip, as can Sepia Tone.

**Effects over time** In iMovie 2, effects aren't an all-or-nothing proposition – iMovie can apply or remove an effect gradually. Apply the Black-&-White effect over time to make a clip start in black-&-white and turn into Technicolor. Animate the Soft Focus effect to make a clip start blurry and come into focus.

To animate effects, use the Effects panel's Effect In and Effect Out sliders. Drag the Effect In slider to the right if you want the effect to appear over time. You'll see a time indicator in the panel's preview area, showing how much time will elapse until the effect is fully visible.

To make an effect go away over time, drag the Effect Out slider to the left. As you drag, the preview area's time indicator shows when the effect will start to fade. Here, you're measuring time from the end of the clip. To have an effect begin to go away two seconds before the end of the clip, drag the Effect Out slider to the left until the time indicator reads 02:00.

Some additional features make their screen debut in iMovie 2. You can now adjust a title's type size, and there are several new title styles to choose from. A new set of sliders gives you more control over title timing, allowing you to specify the speed of animated titles.

Apple also tweaked iMovie 2's export features, but not all the changes are good. To improve performance, Apple changed iMovie's default Web, email, and CD-ROM export settings to use H.263 compression. This lets you see the final results faster, but the image quality is inferior to that of the Sorenson Video compressor in iMovie 1.

If you want the best possible quality, choose the Expert option in the Export dialogue box, and specify Sorenson Video for compression.

Don't miss next month's *Macworld*, where we'll continue our look at iMovie. **MW**

More Info: [www.codeccentral.com](http://www.codeccentral.com)  
Operated by Terran Interactive, this site contains excellent primers on shooting, editing, and compressing Web and CD-ROM video.

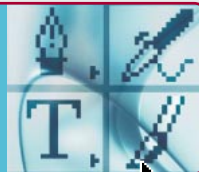
More Info: [www.icanstream.com](http://www.icanstream.com)  
Silly name, great site. This joint venture between several giants in digital video contains compression tutorials and free downloads of compression and DV-editing utilities.





create:

graphics



# Wrapture is boxing clever...

We lift the lid on Quark's new 3D-graphics  
tool for packaging professionals

QuarkWrapture 1.0 allows packaging professionals to render designs for three-dimensional projects – such as a product box – onscreen in 3D at the click of a button. QuarkWrapture offers control of all aspects of the packaging design process, from creating a packaging project from scratch to assembling designs and artwork created with other applications.

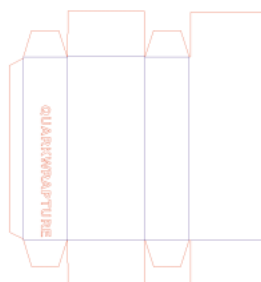
Using the tutorial demo-version on this month's *Macworld* cover CD you can create packaging for a candy box. Beginning with an EPS file that contains the candy box's cut and fold lines, you'll modify the package shape, add artwork and text, and export a three-dimensional preview of the final package. In the process, you'll learn the fundamentals of QuarkWrapture's major features.

Much in QuarkWrapture is based on QuarkXPress 4.1. In this feature, though, we highlight only those features unique to Wrapture. For those unfamiliar with XPress, our cover-CD tutorial covers QuarkWrapture's XPress-like features in depth.



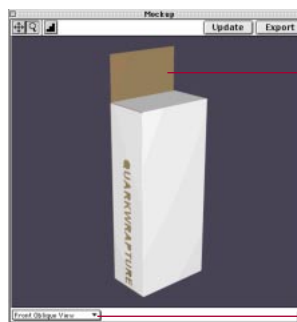
1

**The Mockup palette** As you create the candy box in this tutorial, you'll use the Mockup palette to preview the document at different angles and view animations of how the candy box will be constructed.

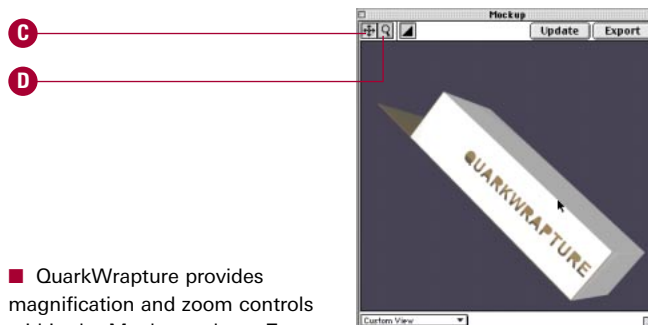


■ Select Open Box Structure.eps (left) from Tutorial Files in the QuarkWrapture demo. The red lines are cut lines that form the boundaries of the package shape. The blue lines are fold lines that show where the package should be folded.

■ To view a preview of Open Box Structure.eps, go to View and choose Mockup to display the Mockup palette (A). You can experiment with different options in the Mockup palette using the View pop-up menu (B). In Animated View, the flaps will be folded in accordance with the package's fold order.



■ To tilt and pan the 3D-box image select the Movement tool (C). Now click anywhere in the area that contains the rendered image. Hold the mouse button down, and move it right or left to pan horizontally. Click-&-drag up or down to tilt vertically. You can rotate the package freely in all directions.

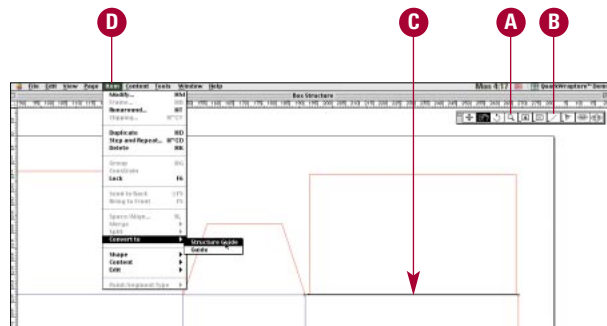


■ QuarkWrapture provides magnification and zoom controls within the Mockup palette. Zoom in and out by option-clicking while in the Movement tool. Zooming changes perspective. However, when you magnify, the rendered image appears simply larger or smaller, without changing perspective. Select the Magnification tool (D). Each click in image area now magnifies the image by 25 per cent. To reduce magnification, press C and click in the image area.

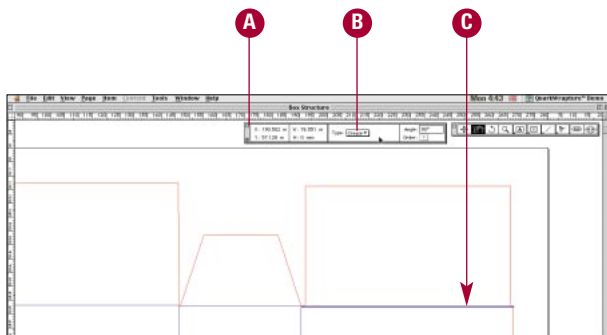
page 120

2

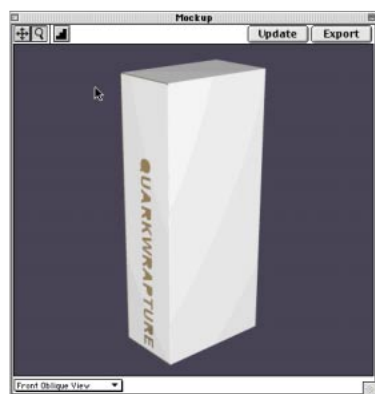
**Adding a crease line** You may have noticed when you displayed the preview of the package that the top flap does not close properly. That's because the box designer forgot to include a fold line for that flap. When you work with a package design in QuarkWrapture, you can add new crease lines.



■ Zoom in around the flap at the upper right of the package (see above) using the Zoom tool (A). Select the Line tool (B) from the Tool palette and draw a line across the bottom of the flap (C). The ends of the line will “stick” to the corners. Make sure the line doesn’t overlap the red or blue lines that are already there. With the new line selected, go to Item, select Convert To (D) and then select Structure Guide. This converts the line from a printable line to a line that’s part of the structure of the package.



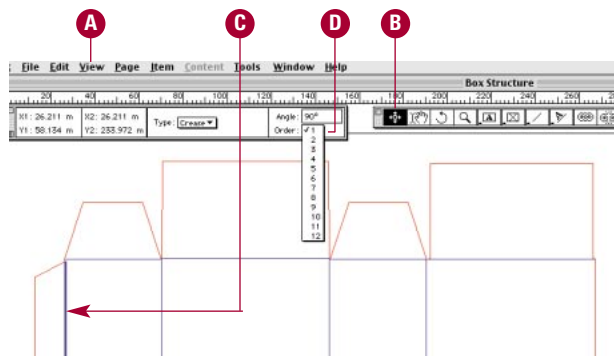
■ The new structure guide will first turn red, but now you need to change it to a fold line. Go to View and select Guide Information to display the Guide Information palette (A). With the new cut-line selected, choose Crease (B) from the Type pop-up menu. The new crease line should now be blue (C).



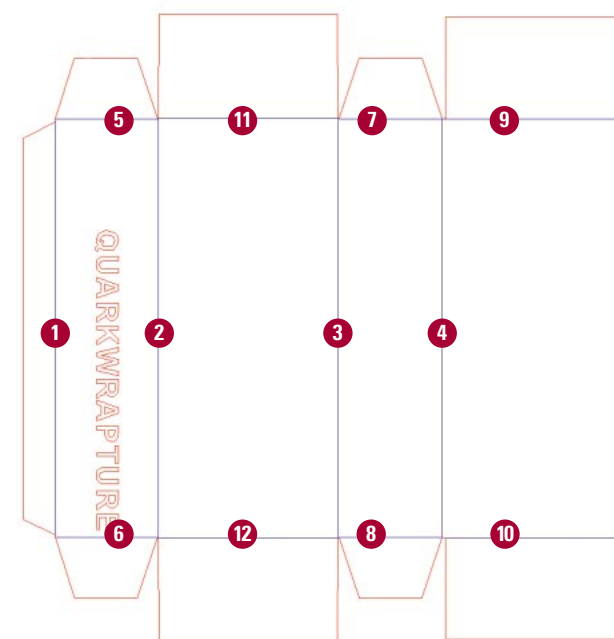
■ To verify that the fold line has been added correctly, go to View and then Mockup. If the Mockup palette is already open, click the Update button. The top flap of the candy box should now close properly.

3

**Changing the fold order** With the default fold-order, it’s difficult to determine which flaps are on top. It would be easier if the vertical creases folded first during the animated sequence, followed by the horizontal creases – then you could see the way the end-flaps fold over one another. QuarkWrapture lets you adjust the crease order of every crease. Here’s how to optimize the crease order of the candy box:



■ Go to View (A) and scroll down to Fit in Window. Choose Item (B) from the Tool palette and select the leftmost vertical crease (C). Select View Guide Information from View and choose 1 from the Order pop-up menu in the Guide Information palette (D). This tells QuarkWrapture that you want to make the selected crease fold first when you animate the folding sequence.

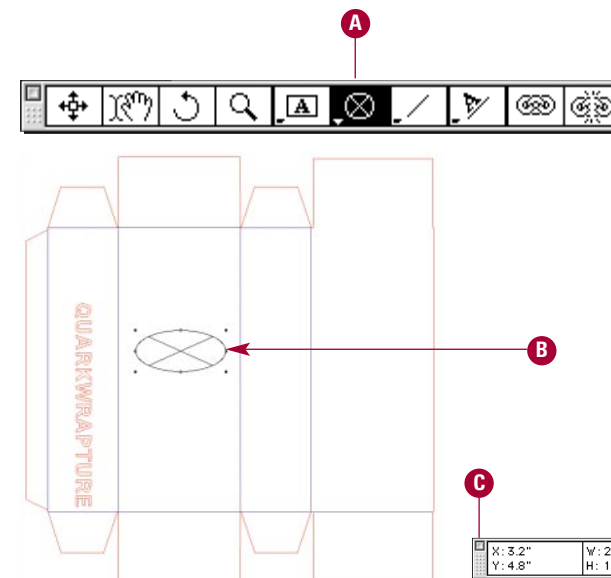


■ Using the above diagram, follow the crease numbers to set the crease order for the document.

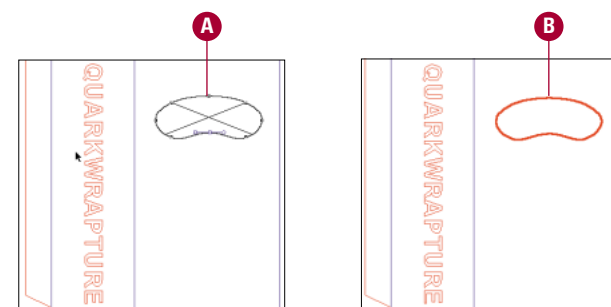
■ Go to View and choose Mockup to display the Mockup palette. Choose Animated View from the View pop-up menu in the lower left corner of the Mockup palette to play an animation of the new fold order.

4

**Creating cutouts** If you wish to add a “window” to your candy box so that customers can see the candy before they buy it, you can do this in a number of ways. Here, we’ll show you how to create a curved cutout.



■ Select the Oval Picture Box tool from the Tool palette (A) and draw an oval picture box in the top panel of the candy box document (B). To position the oval picture box, enter the coordinates as shown in the Measurements palette (C).



■ Select the oval picture box, go to the Shape submenu in Edit, and choose the bézier tool. This turns the oval picture box into a bézier picture box. Drag the bottom centre point up slightly to create a bean shape (A). Go to Item and select Convert To and Structure Guides. Your bézier shape is now a cutout (B).

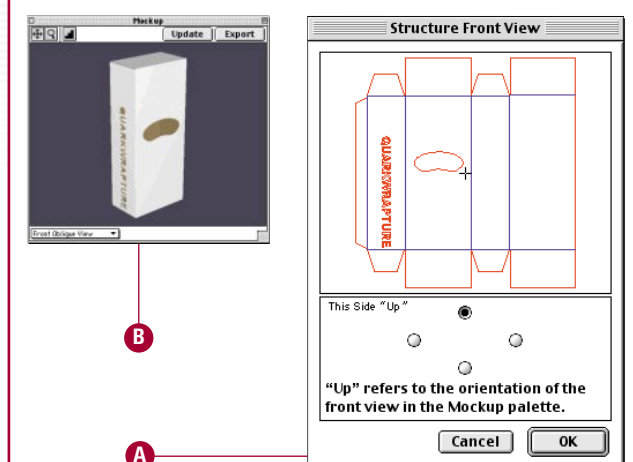


■ Update the Mockup palette and choose Animated View from the View pop-up menu to preview the candy box with the new cut (see left).

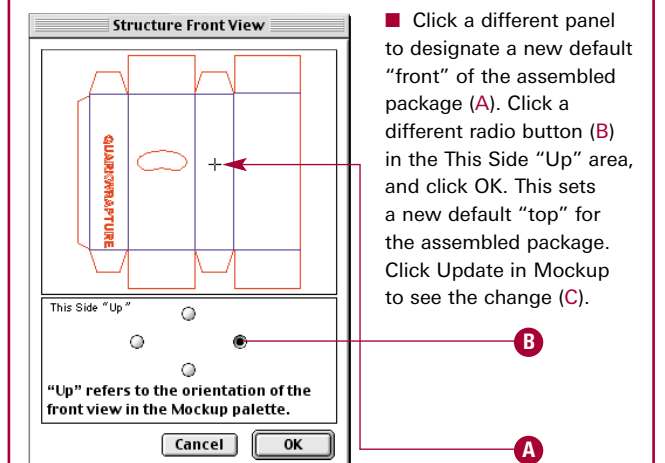
**TIP** You may want to consult with an advisor from the packaging industry for tips on how to add cut-out windows without compromising structural integrity.

5

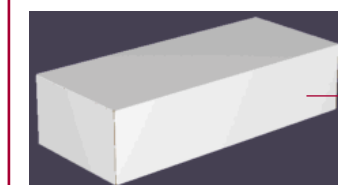
**Changing the default front view** By default, the Mockup palette renders a design with the centre of the die line positioned in the centre of the view screen. The other views – Front Oblique, Back, etc – are relative to this default front-view. However, your package may fold-up with the far right panel as the front of the package, or it might be positioned in the store with the top facing up.



■ Go to Page and select Structure Front View. The Structure Front View dialogue box is now displayed (A). The current Structure Front View settings result in the above Mockup (B).



■ Click a different panel to designate a new default “front” of the assembled package (A). Click a different radio button (B) in the “This Side Up” area, and click OK. This sets a new default “top” for the assembled package. Click Update in Mockup to see the change (C).



■ Repeat all of the above steps to experiment with different panels and orientations. Before you do this, restore the front view settings as shown in (A) at the very top of this panel. Use these settings for the remainder of the exercises.

page 122 ▶

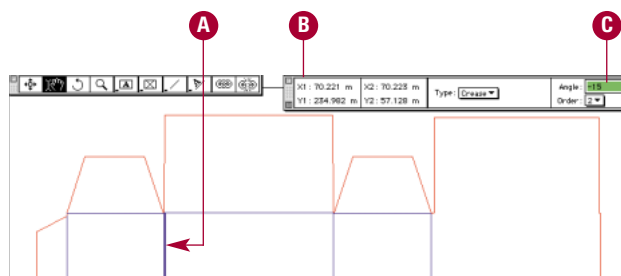


# 6

**Changing the crease angle** In this exercise, you'll change a crease angle so you can see what the candy box looks like when it's open.

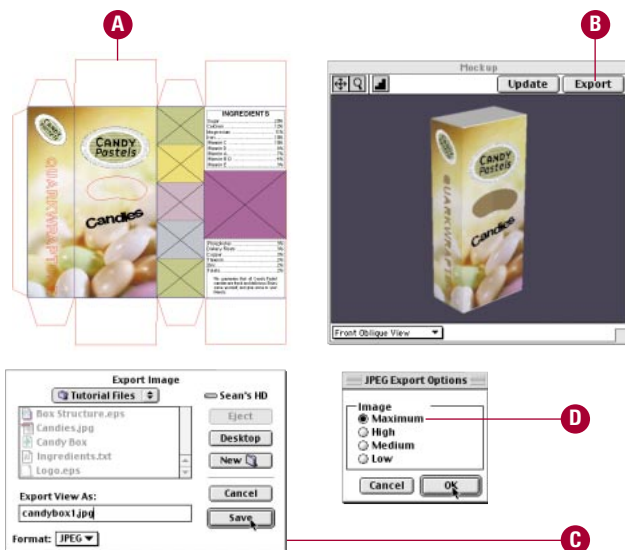
■ Select the second crease from the left in the candy box document (A). Go to the Guide Information palette (B) and Enter -15 in the Angle field (C). The angle of the selected crease is adjusted from 90 to -15 degrees.

■ Go to View and select Mockup. Click Update to preview. See how the flat die-line folds to become a candy box.

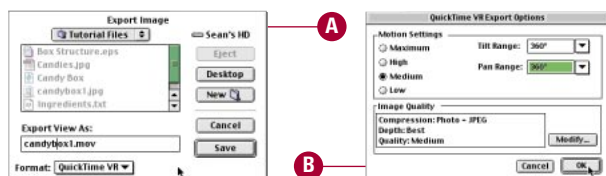


# 7

**Exporting from QuarkWraith** You can export mockups in both JPEG and QuickTime VR format. This simplifies the sharing of mockups with others via email or the Web. Also, you can export your structures in EPS format.



■ When you've completed the QuarkWraith tutorials on the placement of images, text and colours (found on the cover CD demo), your final box structure should look like (A). To export a static mockup of this as a JPEG, first click the Export button (B) in the Mockup palette to display the Export Image dialogue box (C). Type CandyBox1.jpg in Export View As. In JPEG Export Options (D), check the Maximum quality-setting and click OK.

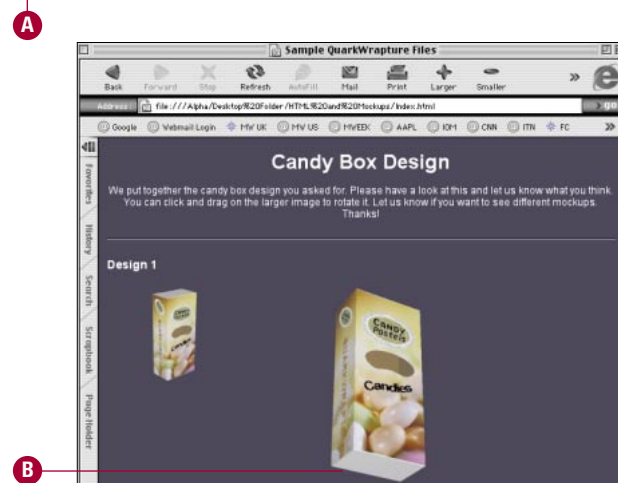
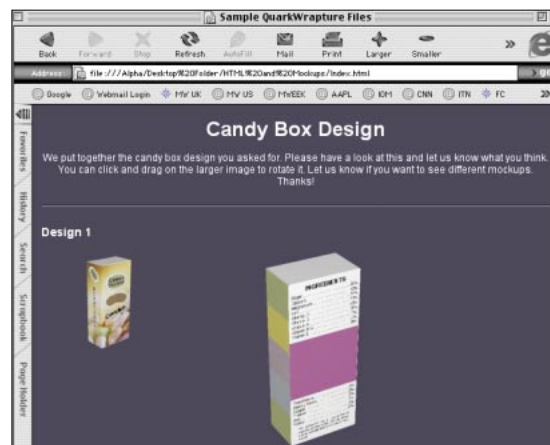


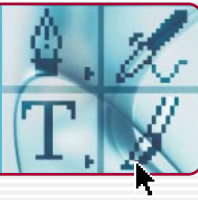
■ A QuickTime VR mockup lets customers rotate your package design. To export as a QuickTime VR mockup, click the Export button in the Mockup palette to display the Export Image dialogue box (A) and then Type CandyBox1.mov in the Export View As field. Choose QuickTime VR from the Format pop-up menu. In QuickTime VR Export options (B), check Medium (for good quality and fast export), and then click OK.

# 8

**Using HTML** Now that you've created JPEG and QuickTime mockups, you need a way to make them available to other people. A good way to do this is with an HTML file. You can write an HTML file to include both JPEG files and QuickTime VR files. For the purposes of this tutorial, there's an HTML sample-file for you – and you can use it to see what your mockups look like on a browser.

■ Make sure you save your files CandyBox1.jpg and CandyBox1.mov in the HTML and Mockups folder in the QuarkWraith Tutorial folder. Also in the folder is a file called Index.html. Double-click this file and your default Web-browser will launch and display your sample files (A). Your .mov file can be examined from any angle (B).





# Illustrator's see-through secrets

Save time with Adobe Illustrator's transparency tools. By Brooke Wheeler



Creating the illusion of transparency is something Adobe Photoshop users have taken for granted since the introduction of the Transparency slider in version 3. But Adobe left Illustrator users behind, forcing them to rely on laborious and unsatisfying draw-&-fill methods to create transparency effects – that is, until the release of Illustrator 9.0 (there's a demo on *Macworld's* October cover CD).

Graphic designer Rob Reed is a big fan of Illustrator 9.0's new Transparency palette. Rob designs Web sites at New York's The Chopping Block ([www.choppingblock.com](http://www.choppingblock.com)), whose clients include Miramax, Nickelodeon, and Time Warner. With the Transparency palette, Rob can apply different opacities to individual objects, entire layers, strokes, and fills, allowing him to reveal, conceal, and blend multiple parts of an image using a few simple commands.

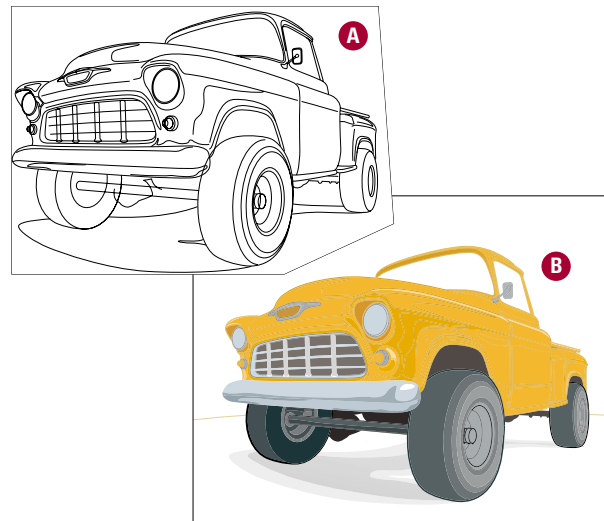
In this illustration, Rob created complex transparency effects for the windows and body of a truck by building shapes of varying opacities and grouping them together – sometimes applying an additional opacity setting to the entire group. He also used the Transparency palette's different blending modes, such as Hard Light and Multiply, to change the way the layered shapes interact. The result is a visual symphony of blended hues that create the illusion of shiny glass, steel, and chrome.

MW

For more information on Adobe Illustrator 9.0, check out *Macworld's* extensive reviews library [www.macworld.co.uk/reviews](http://www.macworld.co.uk/reviews)

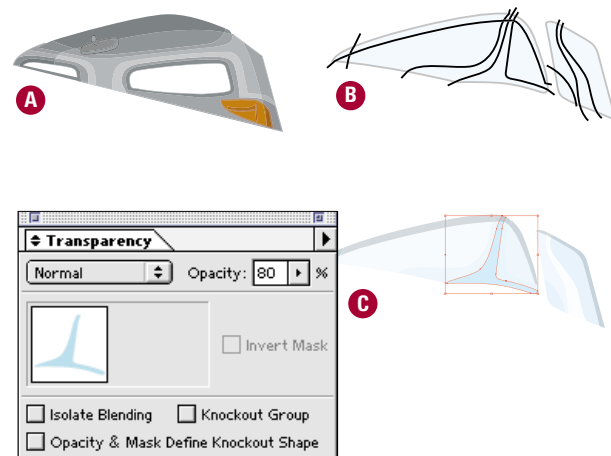
1

Rob first scanned a photo of his '55 Chevy as a drawing reference. He used the pen tool to draw the truck's initial outline, indicating areas of highlight and shadow (A). Using the Outline view mode to exaggerate the truck's lines, he then tweaked details and filled in the outline with solid colours (B).



2

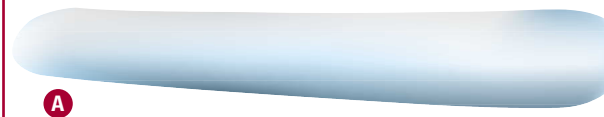
Before constructing the truck's windshield, Rob drew the cab's interior details, such as the rear-view mirror, and filled in those areas with solid colours (A). Next, he created the glass, drawing lines where he wanted reflections to appear (B).



Using the Pathfinder Divide command in the Effects menu, he split the window into separate pieces that fit together like a puzzle. He then gave each section of glass a different opacity – ranging from 10 to 85 per cent – and used blending modes such as Hard Light to control how visible the cab's interior would be (C).

3

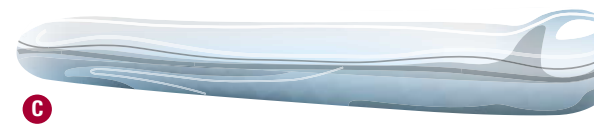
For the complex shadows and highlights of the chrome bumper, Rob layered multiple gradients and transparencies. Using the Gradient Mesh tool, he first created an oblong gradient in the shape of the bumper (A).



Next, he drew a series of shapes to define the bumper's reflections and filled these with additional colour gradients (B). Then Rob adjusted the transparency of the individual shapes, and applied a Multiply blend, which intensified and darkened overlapping colours and made the whites completely transparent.

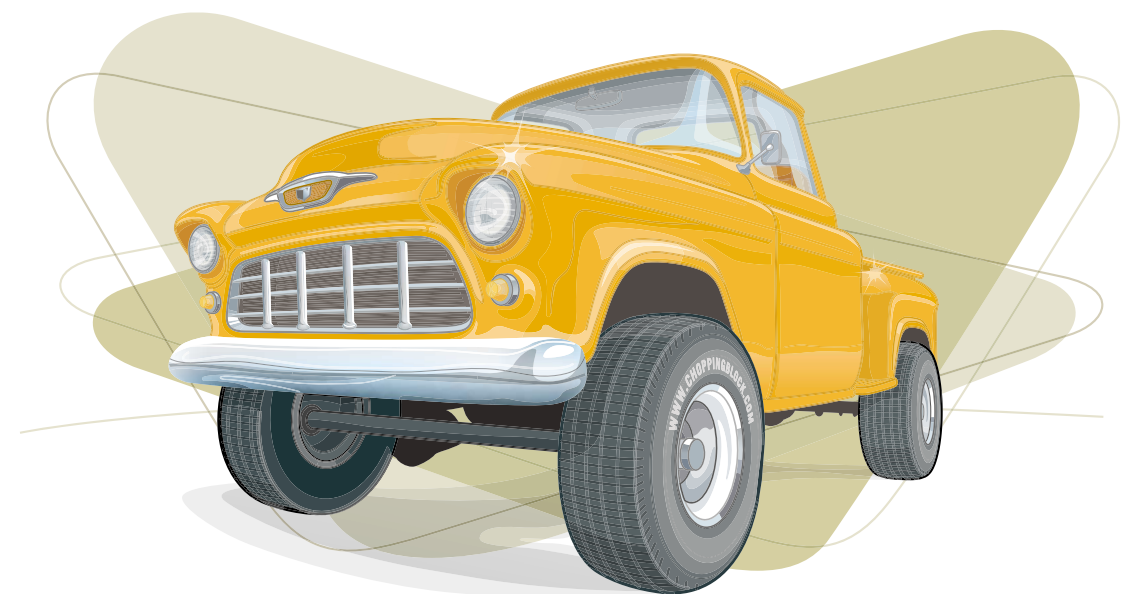
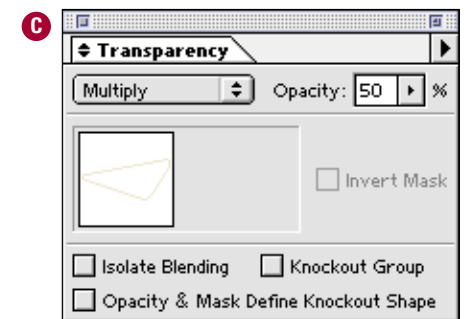
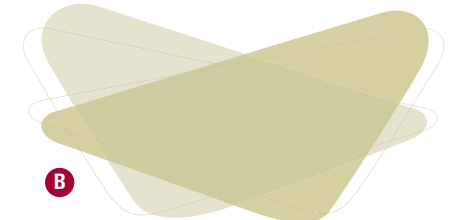
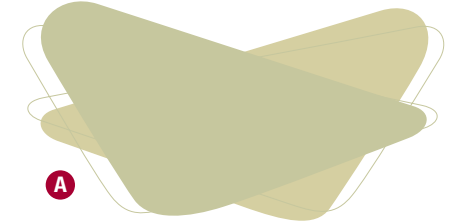


The end result (C) is a combination of subtle colour transitions in some areas and dramatic contrast in others.



4

To put a vibrant finishing touch on his illustration, Rob put the truck in a background of coloured shapes (A). He gave each shape a different opacity and used the Multiply blending mode (B) to make the colours intermingle (C).







- Revert to Mac OS 9 • DV stills • Shut-down disaster

# Q&A/tips

Handy Mac tips and readers' questions answered. By Christopher Breen

## Mac OS X software

**TIP** Looking for some applications you can run with the Mac OS X beta? If so, give Bruno Blondeau's \$15 shareware utility, iOrganize, a try.

iOrganize includes: a NotePad module that allows you to group notes by category, plus it allows you to import standard NotePad files; ContactPad, an easy-to-use address book; and AliasPad, a place to clump aliases for easy application and file launching.

Bruno offers both the standard iOrganize 3.0 for those running the Classic Mac OS and the carbonized iOrganize 3.1b1 for those exploring OS X beta. Go to [www.brunoblondeau.com/iorganize/iorgdownload.htm](http://www.brunoblondeau.com/iorganize/iorgdownload.htm)

## Eudora extension mystery

**TIP** If you're having trouble running Eudora 4.2.1 or later on a G3 PowerBook 400, it may be due to a seemingly unrelated Extension – only for once it's not a conflict. For some reason, the software needs the Network Setup Extension turned on.

## Moving DV stills

**Q** I have a Sony DCR-TRV320 Digital Handycam and a PowerBook G3 with FireWire – via Newer Technology's FireWire 2 Go FireWire card. How can I move still pictures from my camcorder to my PowerBook?  
Mike Jones

**A** Although you'd like to capture images that appear to be static, the process entails pulling those images from a moving videotape – and you, therefore, require a video-editing application. Fortunately, there's no need to tender one penny to obtain such an app. Apple supplies a solution for anyone with a FireWire-equipped Mac: iMovie, Apple's entry-level digital video-editing program.

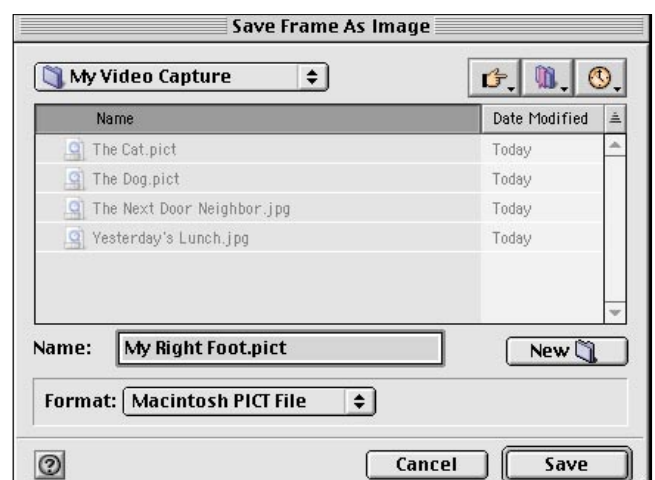
To begin, ignore Apple's system requirements – yes, iMovie will run on a PowerBook – and download a copy of iMovie from Apple's Web site ([www.apple.com/imovie](http://www.apple.com/imovie)). Connect the

FireWire cable from your camcorder to your FireWire 2 Go card, launch iMovie, rewind the camcorder's tape to the location of the picture(s) you want to import, and press iMovie's Import button. As new images appear in iMovie's Viewer window, they will find a place on iMovie's shelf – the storage location for movie clips and images. To convert these frames into PICT or JPEG files, simply move your cursor to the shelf, click on the image you want to convert, and select Save Frame As from the File menu. Now select either PICT or JPEG in the Format pull-down menu, name the file, and click on Save (see "Picture perfect", right).

There's also a non-FireWire solution. Although iMovie won't work without FireWire, I have a free alternative: Strata's VideoShop 4.5 demo – a demo that doesn't let you save video clips, but does let you save frame captures as PICT files. To use this demo, you need a way to get video into your Mac – through the video-input ports on AV Macs; a video card that features a video-input port, such as ATI's Xclaim VR 128 ([www.atitech.com](http://www.atitech.com)); or a USB video-capture device, such as XLR8's InterView ([www.xlr8.com](http://www.xlr8.com)). Because these video cards and USB devices usually ship with some variety of video-editing software, you may not need to use the VideoShop demo.

## Cube monitor mayhem

**TIP** If you've bought a G4 Cube and want to attach a VGA monitor or a projector with a VGA connector to the Cube, rummage around in the accessory box that came with your Cube. It should contain a VGA-to-VGA connector that will allow you to attach the monitor or projector.



## Picture perfect

With iMovie's Save Frame As command, you can transfer still images from a digital camcorder to a Mac.

## Classic sounds

**TIP** Applications running in the Classic environment under Mac OS X Beta on a Power Mac G4 Cube produce no sound. Native system sounds will play, as will sounds that are part of native OS X applications.

## Old Mac, no new software

**Q** I was assured when buying a Sony PC3 Digital Camcorder at Dixons that I would be able to digitally edit films on a Mac. I now find that I am unable to do this because the cable that came with the camera will not connect to the port on my Power Macintosh 5400/180. I have been informed by Sony that I may need a floppy-disc adaptor. This means that the Memory Stick port and connecting leads that came with the camera are useless. However, even with the floppy-disc adaptor, I will only be able to edit the 'Still' pictures, and not the moving video because my computer needs some upgrading to do this. Is there a workaround?  
Ian Bull

**A** This might not be the answer you're looking for, but a 5400 is simply not fast enough for video editing. Unfortunately, it isn't upgradeable either, at least not to the extent needed to deal with video. A floppy-disc adaptor would, in my opinion, be throwing good money after bad. Bite the bullet and buy an iMac – otherwise you'll spend more money propping up an old system. Say goodbye to floppies and hello to digital video.

## Noise-free modem

**TIP** A modem will work but make no noise when connecting to the Web if you're running Mac OS X Beta with a beige Power Mac G3, a Blue-&-White Power Mac G3, or a Power Mac G4.

## Keeping the Net alive

**TIP** If you have an "always on" Internet connection that requires a "keep alive" application – such connections might include cable and Virtual Private Networks (VPN) – to maintain a connection to the Internet, you'll be interested in this workaround.

When Apple's Software Update control panel does its job it quits running applications – including these "keep alive" programs. When the "keep alive" application dies, so too does the Internet connection, and Software Update can't complete its mission. The workaround is to open the Software Update control panel and

click the Update Now button to receive a list of files that need to be updated. Once you have that list, quit Software Update and venture out to Apple's Software Update site ([www.apple.com/swupdates](http://www.apple.com/swupdates)) and manually download the files you want.

## Moving back to Mac OS 9

**TIP** You might want to tuck this away in the back of your mind before you install OS X Beta: To reinstall Mac OS 9 on a volume that currently contains OS X Beta, you must erase the OS X volume first. That means that if you've installed OS X on a hard drive with no partitions, you must initialize the drive – wiping out all the data on that drive. If you've partitioned a drive and installed OS X on one of those partitions, you must erase that partition before reinstalling OS 9.

This is just one more reason to back up all your data before installing OS X Beta.

## Mac OS mix-up

**TIP** You'll notice that when you boot from a volume running Mac OS 9 and hold down the Option key as the Mac starts up, the Startup Manager on your iMac (Slot loading), iBook, PowerBook (FireWire), or Power Mac G4 (AGP Graphics) fails to reveal any OS X disks. To start up in Mac OS X from OS 9, you should instead open the System Disk control panel (found on the OS X Public Beta CD), select the disk you want to use, close the control panel, and reboot your Mac.

## Video-CD on Mac

**Q** My PowerBook is incapable of playing many of the Video-CDs (VCDs) I've purchased, even though these same CDs play back perfectly on a PC. Is there a workaround?  
C J Hinke

**A** For those unhip to the concept, VCD is a video format found most often in Asia – many films made in Hong Kong are available on VCD, as are US releases such as *Star Wars Episode 1* and *Fight Club*. VCDs are MPEG-1-encoded movies pressed onto standard CDs rather than DVDs. The advantage of VCD is that the discs are generally less expensive – though poorer in picture quality – than DVDs, and you can play them on standard CD-ROM drives. VCDs aren't widely available in the UK, but you can find them online (from [www.coolvcd.com](http://www.coolvcd.com), for example) and in the Chinatown areas of large cities.

Although VCDs should play properly through Apple's QuickTime Player, they often don't because Apple's CD/DVD Driver isn't fully compatible with all VCDs. To get a better crack at playing VCDs, buy a copy of Intech Software's ([www.intechusa.com](http://www.intechusa.com)) \$40 CD/DVD SpeedTools 5.1. Fans of VCD report that Intech's driver is a veritable miracle worker when it comes to making VCDs recognizable.







## Mac memory by model

**TIP** If you want the low down on Mac-memory configurations, check out these two resources that reveal the memory underpinnings of every Mac model: Apple's own Apple Spec Database ([www.info.apple.com/applespec/applespec.taf](http://www.info.apple.com/applespec/applespec.taf)) and Newer Technology's helpful utility Guru ([www.newer.tech.com](http://www.newer.tech.com)). Don't waste time trawling through Apple's Technical Information Library (<http://til.info.apple.com>) – the info isn't there.

## Pop-up scripts

**TIP** Here's a simple AppleScript that can quickly put pop-up folders from the root level of your hard drive back into place after you've switched screen resolutions. Just replace "Folder 1" and "Folder 2" with the names of your pop-up folders and insert the name of the last-added pop-up folder after the close window command.

```
tell application "Finder"
    activate
    set popup of container window
of folder "Folder 1" of startup
disk to false
    set popup of container window
of folder "Folder 2" of startup
disk to false
    set popup of container window
of folder "Folder 1" of start
up disk to true
    set popup of container window
of folder "Folder 2" of startup
disk to true
    close window "last added
folder"
end tell
```

Jordan Dueck

## Hide files from nosy parkers

**TIP** If you'd like to hide your important files and folders from nosy co-workers and family members, download a copy of Logan Murray's \$12 shareware utility, Ghost 3.5. Ghost allows you to easily make files and folders invisible, and keep track of these items through a Favorites window. Note that Ghost does not offer encryption and the items it makes invisible can be found and made visible with other programs such as ResEdit.

## Blind restart

**TIP** The Power Mac G4 Cube carries the Reset and Programmer's buttons on the bottom of the Cube – making

it impossible to see which button is which unless you turn the Cube over. Thankfully, Apple provides a tactile clue to the identity of each button. Should the Cube freeze, slip your hand beneath the back of the Cube and feel around for a button that bulges out – that's the Reset button. Like the Blue-&White G3 and Power Mac G4 before it, the Cube's Reset button is distended whereas the Programmer's button is indented. If you end up in the Programmer's Window type "G" (without the quotes) and then press Return to out.

## Improper shut downs

**TIP** If you've failed to turn off the "Warn me if computer was shut down improperly" option in the General Controls control panel and the repair window appears every time you restart your Mac after it crashes, you can get out of this repair window by pressing the Escape key on your Mac's keyboard. Because it's hard to tell exactly when pressing this key will do the most good, try pressing it repeatedly when the repair window first appears.

## Preference failure

**TIP** Applications that depend on TCP/IP running in the Classic environment of Mac OS X may fail due to a corrupted TCP/IP Preferences file – you'll know this has occurred if you see messages in the Classic environment along the lines of "name servers not responding" or "connection attempt failed". If this happens, Apple recommends the following: Quit open applications in the Classic environment, as well as the Classic environment itself. Use Sherlock to locate the TCP/IP Preferences file on the Classic volume, and drag this file to the Trash. Now open the System Preferences application and click Network. Click the Lock icon and enter the administrator's name and password. Change the Configure DNS pop-up menu to Manually and click the Apply button.

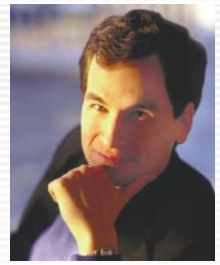
## Early Easter Egg

**TIP** Micromat has a knack for including inventive Easter Eggs in its products. TechTool Pro 3 is no exception. While the fun is in the finding, I'm not sure how anyone would ferret out this without a broad hint.

To discover this secret select About TechTool Pro from the Apple menu and scroll down the list of credits. As you pan down the list keep an eye on the first letter of each name in that list. If you string together a collection of these first initials you'll find your way in.

Macworld's deputy editor David Fanning and contributing editor Christopher Breen answer readers' questions and select reader-submitted tips for this column. Send your question or tip (include your address and phone number) to David Fanning, Q&A, Macworld, 99 Gray's Inn Road, London WC1X 8UT. You can also send email, marked Q&A in the subject line, to [qanda@macworld.co.uk](mailto:qanda@macworld.co.uk). We pay £25 for each tip published here. We cannot make personal replies, so please do not include a stamped-addressed envelope.

**DAVID POGUE** is the author of *iMac for Dummies* (IDG Books Worldwide, 1998) and the *Great Macintosh Easter Egg Hunt* (Berkely Books 1998). He also wrote *Macs for Dummies*, fifth edition, updated for Mac OS 8, *The Weird Wide Web* (IDG Books Worldwide, 1997) and *The Microsloth Joke Book* (Berkeley, 1997). His most recent books are *Mac OS 9: The Missing Manual* and *iMovie: The Missing Manual* (both Pogue Press, 2000).



## Secrets and lies

**"IT surveillance isn't about losing privacy – it's about living in a society that has laws and a conscience"**

**H**ey, want to have an instant best-seller? Write a book about the loss of privacy in the Information Age. Want to sell newspapers? Run a headline about how the evil software conspiracy tracks our every move. Movie? Novel? Party conversation? With high-tech surveillance, you've got yourself a winning theme.

I don't dispute that some tracking is going on. Our phone calls, credit-card transactions and plane reservations have been recorded on some computer somewhere, for years. No, what I'd like to know is, what – in practical, non-hysterical terms – is wrong with this kind of data collection? Reporters, moviemakers, and publishers have latched on to the invasion-of-privacy thing because it sells, but the thinking never seems to go much further than They're watching you.

So what's the downside? The few possibilities I've come across revolve around these arguments: ■ We'll be targeted by marketers. If you visit Amazon.com, you're greeted by ads for books in categories you've bought from recently. When you do a search for car information on Yahoo, the results page may offer a car ad at the top of the screen. The writing is on the wall: Pretty soon, they'll send us ads targeting our interests!

And the problem is what, exactly? I say, bring it on! If I have to look at advertising, why not see ads for products that interest me, for heaven's sake? My interests are Macs, gadgets, Broadway musicals, magic, tennis, books, kids – let the targeting begin!

No, our problem is that not enough ads are aimed at specific audiences. When companies spend millions to show me ads for SUVs and adult diapers, they're wasting their dollars and my time.

■ We'll be caught. Nobody wants to get caught being naughty. People hate the thought that their criminal, extramarital, or pornographic interests might one day come to light. In my book, these are pretty flimsy reasons for championing privacy. If you want only to cover-up violations of the law – moral, marital, or other – your problem isn't the threat of losing privacy; it's living in a society that has laws and a conscience.

■ Our information will be made public someday. No doubt about it: life as a political candidate or celebrity is no picnic. Thanks to massive databases that shadow

our every life-event, public officials are open to scrutiny by every reporter and opponent.

On the other hand, aren't we better off knowing about Jonathan Aitken's perjuring and Jeffrey Archer's many indiscretions? Whether you're a supporter or an opponent, knowing is better than not knowing.

■ It's plain creepy. It is creepy to think that someone is watching us. It makes us nervous, fuels dramatic opinion columns, and keeps the producers of *Big Brother* from using the TV camera over the toilet.

But scary-sounding high-tech paranoia schemes have been foisted upon us before, and they almost never pan out. Remember the Y2K bug? There were people digging bomb shelters in Montana, for heaven's sake, and a lot of publishers got rich on what turned out to be a marketing scam. So far, the theft-of-privacy threat remains mostly in the realm of the theoretical and the someday.

I'm not claiming that there are no downsides to living in a database world. Junk email, for example, is a true annoyance. Nor do I need reminders of the real, if isolated, tragedies caused by the abuse of personal information: the credit-report error that haunts someone for years, the wife-beater who tracks down his ex-spouse's new address, or the AIDS patient who's denied a job because of medical records. These stories are genuinely upsetting.

But there are costs to fearmongering, too. I know people who have turned off their browser's cookies – preference files for Web sites – out of paranoia, and who therefore have to type out convoluted user IDs and access codes with every visit to a restricted site. Thousands of people refuse to buy anything online – never mind that their credit card numbers are at infinitely greater risk of being stolen at a petrol station or restaurant. I know a guy who pays for everything at stores in cash, for fear of giving any private information to anyone. But take it from someone whose credit-card firm refunds 2 per cent of his annual buys: that kind of paranoia can cost you.

Look, I don't want Big Business to invade every corner of our lives. I'll back any law against sending spam, sharing medical records, or collecting our personal data without telling us. My issue is with the marketing of privacy hysteria. There are different ways to lose your privacy – and not all are scary. **MW**